

*C1**23*

The ethylation of cellulose II N. I. Nikitin and  
T. I. Rudneva, J. Applied Chem. (U.S.S.R.) 6,  
716-20 (1933); cf. C. A. 27, 1933 -- Ethylation of cel-  
lulose occurs with  $\text{C}_2\text{H}_5\text{Cl}$  at a slightly higher rate than with  
 $\text{C}_2\text{H}_5\text{Br}$  and at a considerably higher rate than with  
 $\text{C}_2\text{H}_5\text{Cl}$ . With  $\text{C}_2\text{H}_5\text{Cl}$  ethylation is completed in 2 hrs.  
It approaches the triethylcellulose stage. The reaction  
is much more vigorous with all ethyl halides at 100°  
than at 120°. Products of a low degree of ethylation  
had a tendency to swell in benzyl chloride, while medium  
and highly ethylated cellulose went completely in soln.

Partially ethylated cellulose was treated with benzyl  
chloride in the presence of 23% NaOH for 3-4 hrs., dry  
NaOH was then added (35-40%) and the reaction con-  
tinued for 3-8 hrs. at a temp. of 100-120° and with const.  
agitation. The benzyl chloride was then distilled off with  
steam. This method failed to give completely substi-  
tuted cellulose. A table gives the m.p.s. of a number of  
ethyl, benzyl and ethylenyl derivs. of cellulose.  
A. A. Bochtlinsk

CLASSIFICATION INDEX

## ASQ ILA METALLURGICAL LITERATURE CLASSIFICATION

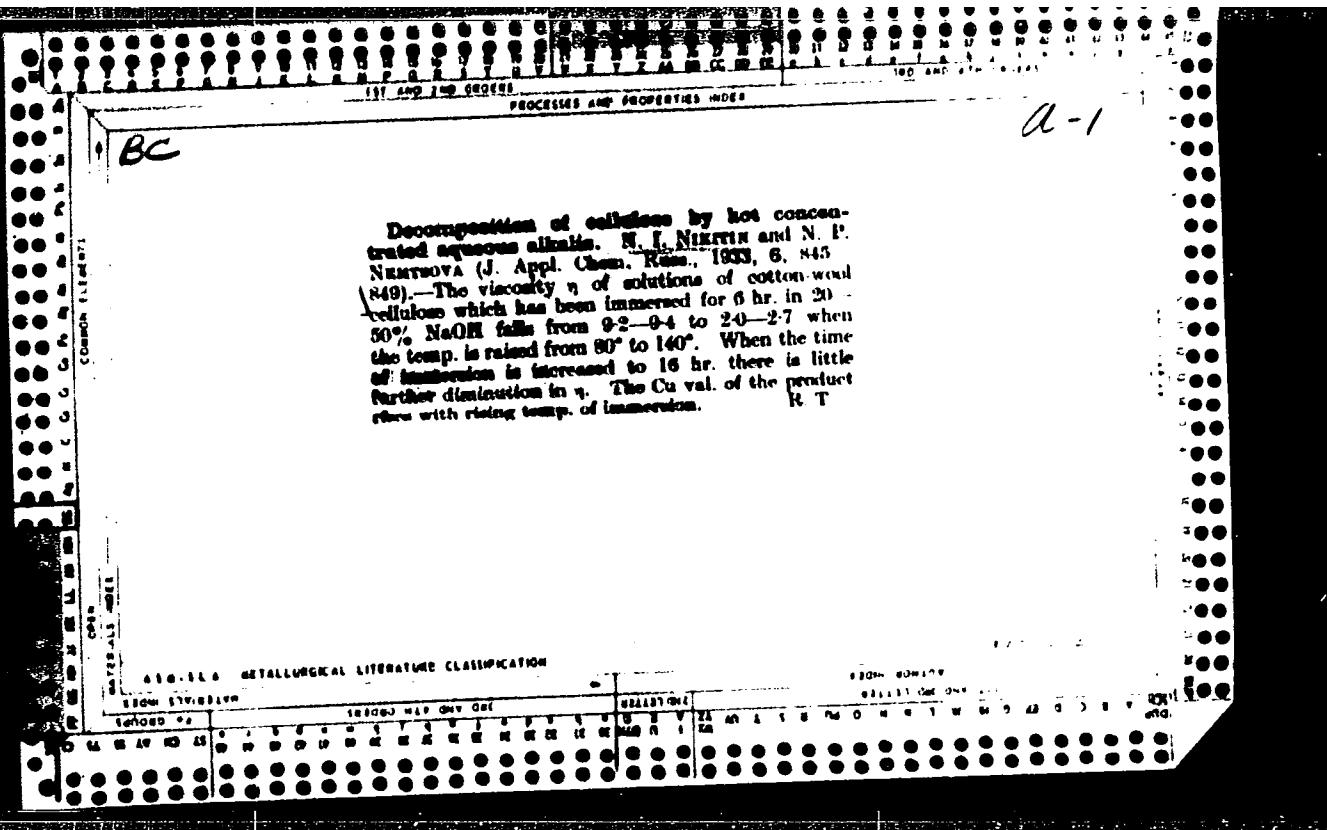
ECON. STANDARDS

TECHN. DATA

ASSISTANT

ECON. BLDG. 179

ECON. BLDG. 179



*Cl*

Preparing propyl-, butyl- and amylocellulose by the action of various halogen alkyls. N. I. Nikitin and I. M. Orlova. *J. Applied Chem.* (U.S.S.R.) 10(8): 1104 (1933).—The following reaction was investigated:  $[C_2H_5O(OH)_2]_n + 3n \text{NaOH} + 3n \text{CuBrCl} = [C_2H_5O(OH)_2]_n + 3n \text{NaCl} + 3n \text{H}_2O$ . In addition to the above reaction of ether formation, a side reaction due to the interaction of the alkyl halide with NaOH takes place. This is accompanied by the formation of the corresponding alk. and a salt or there is a splitting of the halogen acid accompanied by the formation of an olefin. Finely divided filter paper was soaked in 38% NaOH for 18 hrs., pressed to 1/2 of its wt., ground with the corresponding amt. of solid NaOH, and heated in glass tubes with alkyl halide. The contents of the tubes were placed in water, heated to boiling to distil off the low-boiling alkyl halides and steam-distill to drive off the high-boiling halogen derivs. and the alk. formed in the reaction. The product was washed with acidified and pure H<sub>2</sub>O to the disappearance of the alkali and the halogen reaction, and dried to const. weight in a vacuum desiccator. The solv. was tested in Schweitzer reagent, as well as in some organic solvents such as pyridine, alk.-benzene, ether and AcOH.

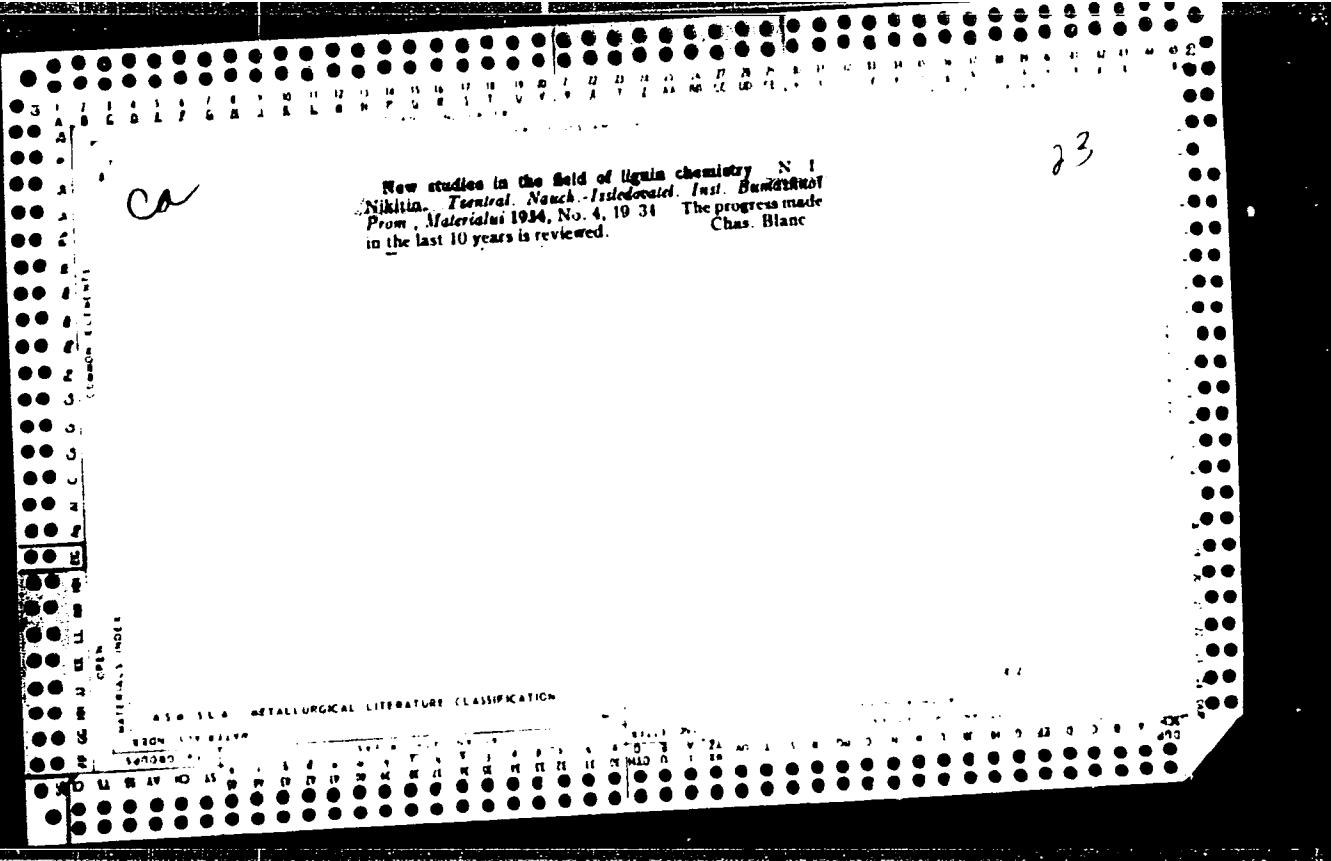
As a rule the highly alkylated products were amorphous and were completely sol. in pyridine, alk.-benzene and benzene. The unchanged and the slightly alkylate cellulose retained the fibrous structure and solv. in Schweitzer reagent. Alkylation with butyl and isobutyl chlorides yielded only a low degree of etherification, while EtBr and isobutyl bromide yielded products contg. 2.25 OC<sub>2</sub>H<sub>5</sub> groups per C<sub>2</sub>H<sub>5</sub>O<sub>2</sub><sup>-</sup>. Bu and isobutyl iodides yielded products with only 1 OC<sub>2</sub>H<sub>5</sub> group. The alkylation of the alk. cellulose with BuBr yielded compds. which corresponded approx. to the formulas  $C_{12}H_{24}O_2(C_2H_5)_2$  or  $C_{12}H_{24}O_2(C_2H_5)_3$ , which were completely sol. in C<sub>2</sub>H<sub>5</sub>O<sub>2</sub><sup>-</sup> and alk.-benzene and which produced films from a C<sub>2</sub>H<sub>5</sub>O<sub>2</sub><sup>-</sup> soln. Among the isobutyl halides the bromide gave the best, but still an unsatisfactory, alkylation. Alkylation with PbBr yielded products contg. 2<sup>1</sup>/<sub>2</sub> 3 alkyl groups per C<sub>2</sub>H<sub>5</sub>O<sub>2</sub><sup>-</sup>, while the other halides did not yield satisfactory results.

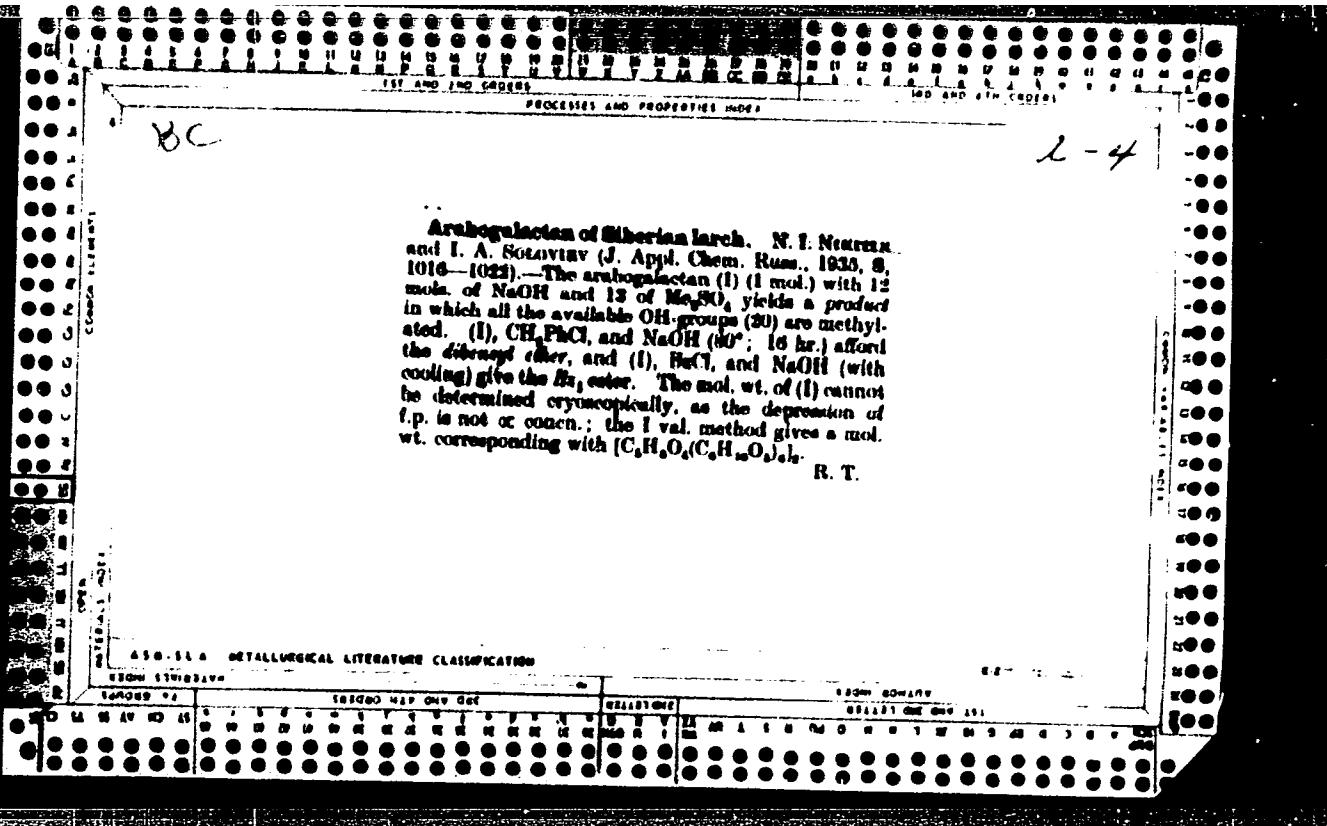
A A Boettling

23

ABRILIA METALLURGICAL LITERATURE CLASSIFICATION

1940-1944 1945-1949 1950-1954 1955-1959 1960-1964 1965-1969 1970-1974 1975-1979 1980-1984 1985-1989 1990-1994 1995-1999 2000-2004 2005-2009 2010-2014 2015-2019 2020-2024 2025-2029 2030-2034 2035-2039 2040-2044 2045-2049 2050-2054 2055-2059 2060-2064 2065-2069 2070-2074 2075-2079 2080-2084 2085-2089 2090-2094 2095-2099 2100-2104 2105-2109 2110-2114 2115-2119 2120-2124 2125-2129 2130-2134 2135-2139 2140-2144 2145-2149 2150-2154 2155-2159 2160-2164 2165-2169 2170-2174 2175-2179 2180-2184 2185-2189 2190-2194 2195-2199 2200-2204 2205-2209 2210-2214 2215-2219 2220-2224 2225-2229 2230-2234 2235-2239 2240-2244 2245-2249 2250-2254 2255-2259 2260-2264 2265-2269 2270-2274 2275-2279 2280-2284 2285-2289 2290-2294 2295-2299 2300-2304 2305-2309 2310-2314 2315-2319 2320-2324 2325-2329 2330-2334 2335-2339 2340-2344 2345-2349 2350-2354 2355-2359 2360-2364 2365-2369 2370-2374 2375-2379 2380-2384 2385-2389 2390-2394 2395-2399 2400-2404 2405-2409 2410-2414 2415-2419 2420-2424 2425-2429 2430-2434 2435-2439 2440-2444 2445-2449 2450-2454 2455-2459 2460-2464 2465-2469 2470-2474 2475-2479 2480-2484 2485-2489 2490-2494 2495-2499 2500-2504 2505-2509 2510-2514 2515-2519 2520-2524 2525-2529 2530-2534 2535-2539 2540-2544 2545-2549 2550-2554 2555-2559 2560-2564 2565-2569 2570-2574 2575-2579 2580-2584 2585-2589 2590-2594 2595-2599 2600-2604 2605-2609 2610-2614 2615-2619 2620-2624 2625-2629 2630-2634 2635-2639 2640-2644 2645-2649 2650-2654 2655-2659 2660-2664 2665-2669 2670-2674 2675-2679 2680-2684 2685-2689 2690-2694 2695-2699 2700-2704 2705-2709 2710-2714 2715-2719 2720-2724 2725-2729 2730-2734 2735-2739 2740-2744 2745-2749 2750-2754 2755-2759 2760-2764 2765-2769 2770-2774 2775-2779 2780-2784 2785-2789 2790-2794 2795-2799 2800-2804 2805-2809 2810-2814 2815-2819 2820-2824 2825-2829 2830-2834 2835-2839 2840-2844 2845-2849 2850-2854 2855-2859 2860-2864 2865-2869 2870-2874 2875-2879 2880-2884 2885-2889 2890-2894 2895-2899 2900-2904 2905-2909 2910-2914 2915-2919 2920-2924 2925-2929 2930-2934 2935-2939 2940-2944 2945-2949 2950-2954 2955-2959 2960-2964 2965-2969 2970-2974 2975-2979 2980-2984 2985-2989 2990-2994 2995-2999 3000-3004 3005-3009 3010-3014 3015-3019 3020-3024 3025-3029 3030-3034 3035-3039 3040-3044 3045-3049 3050-3054 3055-3059 3060-3064 3065-3069 3070-3074 3075-3079 3080-3084 3085-3089 3090-3094 3095-3099 3100-3104 3105-3109 3110-3114 3115-3119 3120-3124 3125-3129 3130-3134 3135-3139 3140-3144 3145-3149 3150-3154 3155-3159 3160-3164 3165-3169 3170-3174 3175-3179 3180-3184 3185-3189 3190-3194 3195-3199 3200-3204 3205-3209 3210-3214 3215-3219 3220-3224 3225-3229 3230-3234 3235-3239 3240-3244 3245-3249 3250-3254 3255-3259 3260-3264 3265-3269 3270-3274 3275-3279 3280-3284 3285-3289 3290-3294 3295-3299 3300-3304 3305-3309 3310-3314 3315-3319 3320-3324 3325-3329 3330-3334 3335-3339 3340-3344 3345-3349 3350-3354 3355-3359 3360-3364 3365-3369 3370-3374 3375-3379 3380-3384 3385-3389 3390-3394 3395-3399 3400-3404 3405-3409 3410-3414 3415-3419 3420-3424 3425-3429 3430-3434 3435-3439 3440-3444 3445-3449 3450-3454 3455-3459 3460-3464 3465-3469 3470-3474 3475-3479 3480-3484 3485-3489 3490-3494 3495-3499 3500-3504 3505-3509 3510-3514 3515-3519 3520-3524 3525-3529 3530-3534 3535-3539 3540-3544 3545-3549 3550-3554 3555-3559 3560-3564 3565-3569 3570-3574 3575-3579 3580-3584 3585-3589 3590-3594 3595-3599 3600-3604 3605-3609 3610-3614 3615-3619 3620-3624 3625-3629 3630-3634 3635-3639 3640-3644 3645-3649 3650-3654 3655-3659 3660-3664 3665-3669 3670-3674 3675-3679 3680-3684 3685-3689 3690-3694 3695-3699 3700-3704 3705-3709 3710-3714 3715-3719 3720-3724 3725-3729 3730-3734 3735-3739 3740-3744 3745-3749 3750-3754 3755-3759 3760-3764 3765-3769 3770-3774 3775-3779 3780-3784 3785-3789 3790-3794 3795-3799 3800-3804 3805-3809 3810-3814 3815-3819 3820-3824 3825-3829 3830-3834 3835-3839 3840-3844 3845-3849 3850-3854 3855-3859 3860-3864 3865-3869 3870-3874 3875-3879 3880-3884 3885-3889 3890-3894 3895-3899 3900-3904 3905-3909 3910-3914 3915-3919 3920-3924 3925-3929 3930-3934 3935-3939 3940-3944 3945-3949 3950-3954 3955-3959 3960-3964 3965-3969 3970-3974 3975-3979 3980-3984 3985-3989 3990-3994 3995-3999 4000-4004 4005-4009 4010-4014 4015-4019 4020-4024 4025-4029 4030-4034 4035-4039 4040-4044 4045-4049 4050-4054 4055-4059 4060-4064 4065-4069 4070-4074 4075-4079 4080-4084 4085-4089 4090-4094 4095-4099 4100-4104 4105-4109 4110-4114 4115-4119 4120-4124 4125-4129 4130-4134 4135-4139 4140-4144 4145-4149 4150-4154 4155-4159 4160-4164 4165-4169 4170-4174 4175-4179 4180-4184 4185-4189 4190-4194 4195-4199 4200-4204 4205-4209 4210-4214 4215-4219 4220-4224 4225-4229 4230-4234 4235-4239 4240-4244 4245-4249 4250-4254 4255-4259 4260-4264 4265-4269 4270-4274 4275-4279 4280-4284 4285-4289 4290-4294 4295-4299 4300-4304 4305-4309 4310-4314 4315-4319 4320-4324 4325-4329 4330-4334 4335-4339 4340-4344 4345-4349 4350-4354 4355-4359 4360-4364 4365-4369 4370-4374 4375-4379 4380-4384 4385-4389 4390-4394 4395-4399 4400-4404 4405-4409 4410-4414 4415-4419 4420-4424 4425-4429 4430-4434 4435-4439 4440-4444 4445-4449 4450-4454 4455-4459 4460-4464 4465-4469 4470-4474 4475-4479 4480-4484 4485-4489 4490-4494 4495-4499 4500-4504 4505-4509 4510-4514 4515-4519 4520-4524 4525-4529 4530-4534 4535-4539 4540-4544 4545-4549 4550-4554 4555-4559 4560-4564 4565-4569 4570-4574 4575-4579 4580-4584 4585-4589 4590-4594 4595-4599 4600-4604 4605-4609 4610-4614 4615-4619 4620-4624 4625-4629 4630-4634 4635-4639 4640-4644 4645-4649 4650-4654 4655-4659 4660-4664 4665-4669 4670-4674 4675-4679 4680-4684 4685-4689 4690-4694 4695-4699 4700-4704 4705-4709 4710-4714 4715-4719 4720-4724 4725-4729 4730-4734 4735-4739 4740-4744 4745-4749 4750-4754 4755-4759 4760-4764 4765-4769 4770-4774 4775-4779 4780-4784 4785-4789 4790-4794 4795-4799 4800-4804 4805-4809 4810-4814 4815-4819 4820-4824 4825-4829 4830-4834 4835-4839 4840-4844 4845-4849 4850-4854 4855-4859 4860-4864 4865-4869 4870-4874 4875-4879 4880-4884 4885-4889 4890-4894 4895-4899 4900-4904 4905-4909 4910-4914 4915-4919 4920-4924 4925-4929 4930-4934 4935-4939 4940-4944 4945-4949 4950-4954 4955-4959 4960-4964 4965-4969 4970-4974 4975-4979 4980-4984 4985-4989 4990-4994 4995-4999 5000-5004 5005-5009 5010-5014 5015-5019 5020-5024 5025-5029 5030-5034 5035-5039 5040-5044 5045-5049 5050-5054 5055-5059 5060-5064 5065-5069 5070-5074 5075-5079 5080-5084 5085-5089 5090-5094 5095-5099 5100-5104 5105-5109 5110-5114 5115-5119 5120-5124 5125-5129 5130-5134 5135-5139 5140-5144 5145-5149 5150-5154 5155-5159 5160-5164 5165-5169 5170-5174 5175-5179 5180-5184 5185-5189 5190-5194 5195-5199 5200-5204 5205-5209 5210-5214 5215-5219 5220-5224 5225-5229 5230-5234 5235-5239 5240-5244 5245-5249 5250-5254 5255-5259 5260-5264 5265-5269 5270-5274 5275-5279 5280-5284 5285-5289 5290-5294 5295-5299 5300-5304 5305-5309 5310-5314 5315-5319 5320-5324 5325-5329 5330-5334 5335-5339 5340-5344 5345-5349 5350-5354 5355-5359 5360-5364 5365-5369 5370-5374 5375-5379 5380-5384 5385-5389 5390-5394 5395-5399 5400-5404 5405-5409 5410-5414 5415-5419 5420-5424 5425-5429 5430-5434 5435-5439 5440-5444 5445-5449 5450-5454 5455-5459 5460-5464 5465-5469 5470-5474 5475-5479 5480-5484 5485-5489 5490-5494 5495-5499 5500-5504 5505-5509 5510-5514 5515-5519 5520-5524 5525-5529 5530-5534 5535-5539 5540-5544 5545-5549 5550-5554 5555-5559 5560-5564 5565-5569 5570-5574 5575-5579 5580-5584 5585-5589 5590-5594 5595-5599 5600-5604 5605-5609 5610-5614 5615-5619 5620-5624 5625-5629 5630-5634 5635-5639 5640-5644 5645-5649 5650-5654 5655-5659 5660-5664 5665-5669 5670-5674 5675-5679 5680-5684 5685-5689 5690-5694 5695-5699 5700-5704 5705-5709 5710-5714 5715-5719 5720-5724 5725-5729 5730-5734 5735-5739 5740-5744 5745-5749 5750-5754 5755-5759 5760-5764 5765-5769 5770-5774 5775-5779 5780-5784 5785-5789 5790-5794 5795-5799 5800-5804 5805-5809 5810-5814 5815-5819 5820-5824 5825-5829 5830-5834 5835-5839 5840-5844 5845-5849 5850-5854 5855-5859 5860-5864 5865-5869 5870-5874 5875-5879 5880-5884 5885-5889 5890-5894 5895-5899 5900-5904 5905-5909 5910-5914 5915-5919 5920-5924 5925-5929 5930-5934 5935-5939 5940-5944 5945-5949 5950-5954 5955-5959 5960-5964 5965-5969 5970-5974 5975-5979 5980-5984 5985-5989 5990-5994 5995-5999 6000-6004 6005-6009 6010-6014 6015-6019 6020-6024 6025-6029 6030-6034 6035-6039 6040-6044 6045-6049 6050-6054 6055-6059 6060-6064 6065-6069 6070-6074 6075-6079 6080-6084 6085-6089 6090-6094 6095-6099 6100-6104 6105-6109 6110-6114 6115-6119 6120-6124 6125-6129 6130-6134 6135-6139 6140-6144 6145-6149 6150-6154 6155-6159 6160-6164 6165-6169 6170-6174 6175-6179 6180-6184 6185-6189 6190-6194 6195-6199 6200-6204 6205-6209 6210-6214 6215-6219 6220-6224 6225-6229 6230-6234 6235-6239 6240-6244 6245-6249 6250-6254 6255-6259 6260-6264 6265-6269 6270-6274 6275-6279 6280-6284 6285-6289 6290-6294 6295-6299 6300-6304 6305-6309 6310-6314 6315-6319 6320-6324 6325-6329 6330-6334 6335-6339 6340-6344 6345-6349 6350-6354 6355-6359 6360-6364 6365-6369 6370-6374 6375-6379 6380-6384 6385-6389 6390-6394 6395-6399 6400-6404 6405-6409 6410-6414 6415-6419 6420-6424 6425-6429 6430-6434 6435-6439 6440-6444 6445-6449 6450-6454 6455-6459 6460-6464 6465-6469 6470-6474 6475-6479 6480-6484 6485-6489 6490-6494 6495-6499 6500-6504 6505-6509 6510-6514 6515-6519 6520-6524 6525-6529 6530-6534 6535-6539 6540-6544 6545-6549 6550-6554 6555-6559 6560-6564 6565-6569 6570-6574 6575-6579 6580-6584 6585-6589 6590-6594 6595-6599 6600-6604 6605-6609 6610-6614 6615-6619 6620-6624 6625-6629 6630-6634 6635-6639 6640-6644 6645-6649 6650-6654 6655-6659 6660-6664 6665-6669 6670-6674 6675-6679 6680-6684 6685-6689 6690-6694 6695-6699 6700-6704 6705-6709 6710-6714 6715-6719 6720-6724 6725-6729 6730-6734 6735-6739 6740-6744 6745-6749 6750-6754 6755-6759 6760-6764 6765-6769 6770-6774 6775-6779 6780-6784 6785-6789 6790-6794 6795-6799 6800-6804 6805-6809 6810-6814 6815-6819 6820-6824 6825-6829 6830-6834 6835-6839 6840-6844 6845-6849 6850-6854 6855-6859 6860-6864 6865-6869 6870-6874 6875-6879 6880-6884 6885-6889 6890-6894 6895-6899 6900-6904 6905-6909 6910-6914 6915-6919 6920-6924 6925-6929 6930-6934 6935-6939 6940-6944 6945-6949 6950-6954 6955-6959 6960-6964 6965-6969 6970-6974 6975-6979 6980-6984 6985-6989 6990-6994 6995-6999 7000-7004 7005-7009 7010-7014 7015-7019 7020-7024 7025-7029 7030-7034 7035-7039 7040-7044 7045-7049 7050-7054 7055-7059 7060-7064 7065-7069





B C

Action of ethylene oxide on cellulose. I. N. I.  
Nikitin and T. I. Rudneva (J. Appl. Chem., Russ.,  
1935, "B," 1023-1032).—Bleached cotton-wool (I)  
and  $(\text{CH}_2)_2\text{O}$  at 50° afford a product containing  
1  $\text{OH}-\text{CH}_2-\text{CH}_2-\text{O}-$  (II) per 32  $\text{C}_6\text{H}_{10}\text{O}_5$  units; the  
proportion rises to 1 : 4-8 in presence of dil. alkalis,  
and attains a max. of 1 : 1.6 in presence of 18%  
 $\text{NaOH}$  or 35%  $\text{KOH}$  (50-60°; 15 min.). The pro-  
ducts are much more readily hydrolysed and acetyl-  
ated than is (I), but the velocity of benzoylation is  
not affected; they yield highly viscous solutions in  
 $\text{NaOH}$ , the viscosity rising with the no. of (II) intro-  
duced.

R. T.

Action of ethylene oxide on wood and lignin.  
 II. N. I. NIKRIN and T. I. RUDNEVA (J. Appl. Chem. Russ., 1935, 8, 1176-1183).—Willstätter lignin treated with 16% NaOH and  $(\text{CH}_2)_2\text{O}$  (I) (2 hr. at 70°, or 2 days at room temp.) yields amorphous hydroxyethyl-lignin (II), containing 38-76% of  $\text{OEt} + \text{OMe}$ , and 5-18% of acetylatable OH. (I) is eliminated from (II) by HgI at 135-140°, but not by hydrolysis with 5%  $\text{H}_2\text{SO}_4$  (5 hr. at the b.p.), which, however, transforms 21-6% of (II) into a  $\text{H}_2\text{O}$ -sol., non-reducing product. A product apparently identical with (II) is obtained from wood by treatment successively with NaOH and (I), followed by hydrolysis with 5%  $\text{H}_2\text{SO}_4$ . The hygroscopicity and swelling capacity of (II) are > those of lignin.

R.T.

**APPROVED FOR RELEASE: 07/19/2001**

CIA-RDP86-00513R001137010011-6"

The action of benzaldehyde on lignin. N. I. Nikitin and  
I. M. Orlova. *J. Applied Chem. U.S.S.R.* 6, 1402 &  
in German 1408-01 (1935). Elm lignin, heated at 120°  
in a sealed tube with 12 times its wt. of BrH, dissolves  
In the presence of HCl, 95° is sufficient. Under these  
conditions, BrH will not dissolve lignin directly from wood.  
Centrifuging the soln gives 1.6% insol material. BrH  
ppts 60-70% and petroleum ether a further 8-25% of the  
substance. The residue is obtained by dist. off the BrH  
The fractions appear to be decompn products of lignin  
H. M. Leicester

3-II-5

Preparation of cellulose pitchlates. N. I. Nekrasov and I. M. Ozlova (J. Appl. Chem., Russ., 1935, 8, 1410--1414).—Cellulose and starch yield pitchlates in which > 0.25 OH group per  $C_{6}H_{10}O_6$  unit is substituted by the Salenato-Schiff reaction with  $C_6H_5COO)_2$ , where under anhydrous conditions pitchlation gives 80% carbonization. In org. solvents ( $C_6H_5N$  and  $TlNO_3$  at 120--140°) > 1 OH is carbonized. The esters are distinguished by their low solubility, and the low degree of carbonization is attributed to formation of an insul. layer on the surface of the fiber, which prevents penetration of the reagents.

R. T.

A.I.R.-I.A. METALLURGICAL LITERATURE CLASSIFICATION

Ca  
63

Rapid determination of viscosity of unbleached viscose pulp. N. I. Nikulin and L. A. Nagrodskii. *Biozashchishch.* From 14, No. 12, 13-16 (1959). Wash and sift a sample from an uncooked portion in a sieve, and press out by hand to a nearly const wt. Det. the Bjorkman no. in a sep sample. Place the prep'd sample corresponding to 1 g of oven dry pulp in a 10 cc flask contg. 70 cc H<sub>2</sub>O (55°) and Ca(ClO)<sub>2</sub> in amount corresponding to the Bjorkman no., bleach at 55° for 10 min, with shaking at 30 sec intervals, filter off the pulp to a Buchner funnel, wash with 300 cc H<sub>2</sub>O (30°), place in a glass tube and dry at 105° in a drying oven while passing warm air through the tube. Treat 0.7 g. of the dry pulp with 20% NH<sub>4</sub>OH for 3 min, dissolve it in 35 cc of Schwettler's reagent in a 60 cc brown colored flask at 20° for 10 min. Replace the glass stopper by a rubber stopper fitted with a viscometer pipet and a glass cock connected with an atomizer rubber bulb. Pump the soln into the pipet, open the cock and det. the viscosity. For the control of viscosity in the process of bleaching of viscose pulp, the bleaching operation in the detector is omitted. Chas. Blane

/8

De lignification of fir wood pulp by means of dioxane  
and the composition of natural lignin N. I. Nikitin and  
I. M. Chikova / Applied Chem. (U.S.S.R.) 6, 2210  
14th German. 22(1964) 100. The pulp was treated on a  
water bath for 12-22 hrs. with 6 parts dioxane in the  
presence of HCl as catalyst (0.12-0.75% by the wt. of  
the dioxane), yielding 10-23.7% (by wt. of pulp) of a  
crude lignin. Lignin prep'd. from the dioxane soln. with  
ether had the compn. C 57.81, H 5.6.6.6, and Met groups  
12.1-13.4%, depending on the amt. of catalyst  
and the duration of the treatment, i.e., it was similar  
to that obtained by Willstatter. One third of the  
crude lignin was easily dissolved in hot water, yielding a  
lignin of the compn. C 64.07, H 5.26, and Met groups  
13.2-18.8%. Further treatment of the lignin with boiling  
1% H<sub>2</sub>SO<sub>4</sub> for 5 hrs. caused a decrease in wt. of Met and  
reducing sugar in an eq. wt. after the hot water treat-  
ment and in the hydrolyzate after the H<sub>2</sub>SO<sub>4</sub> treatment was  
6.8% of the crude lignin. In addn., the analysis of a  
crude lignin, after pptg. from dioxane, disclosed 16% of  
pentosans. The compn. of crude lignin was not changed  
after extg. it from dioxane with ether, but 6% (by wt. of  
the pulp) of lignin was not extractable from dioxane with  
ether. The pulp residue undissolved in the dioxane soln.  
contained lignin 12.2, pentosans 5.3, Met groups 2.4%  
(by wt. of pulp). The authors believe that lignin can  
exist in the fr pulp as a specific substance which is extracted  
with dioxane under mild conditions in an uncondensed  
form which is very similar to the natural lignin. Five  
references.

A. A. Podgorny

CLASSIFICATION

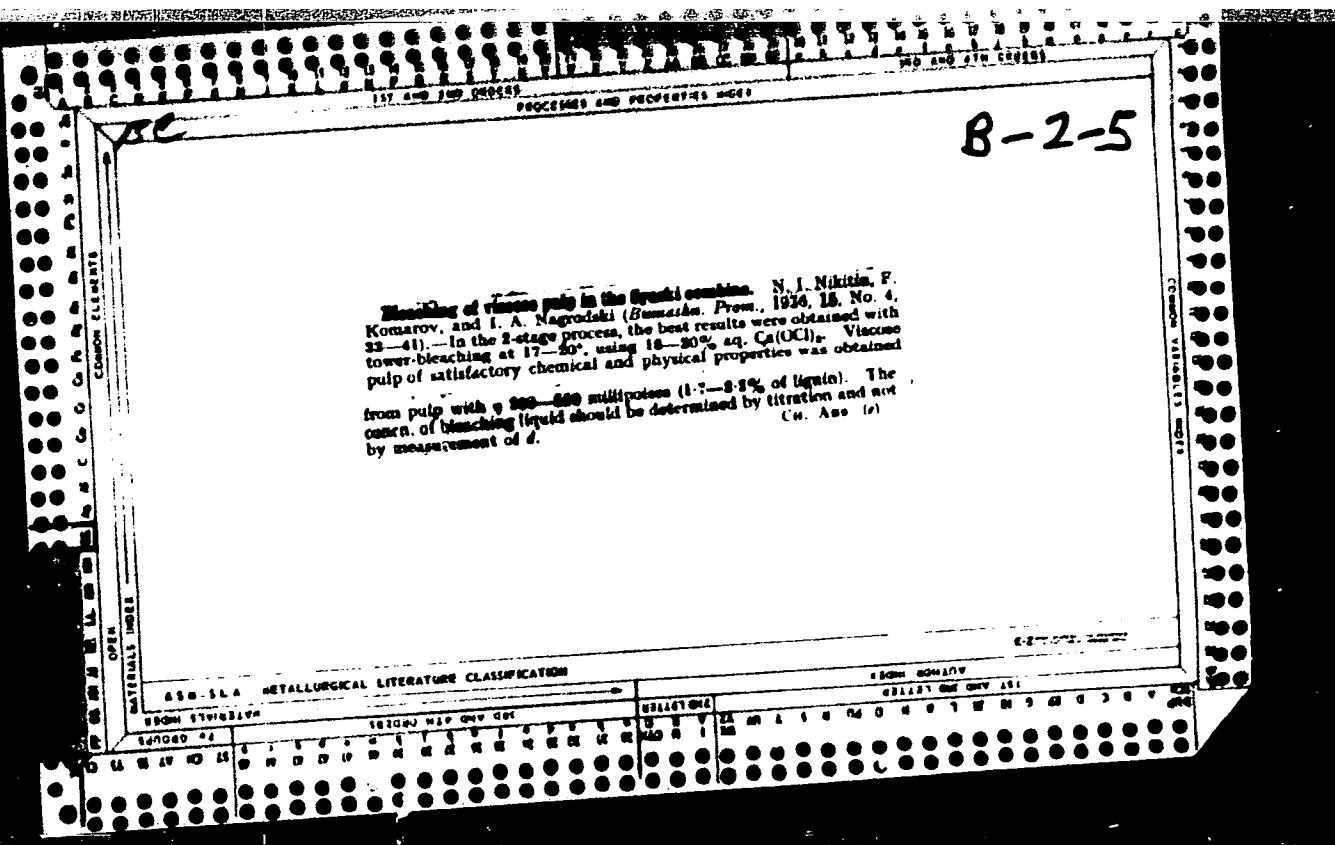
"APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6

Reaction of lignin to hemicelluloses II N. I. Nikulin,  
M. Avdeeva and L. M. Chikova / Applied Chem. (U.S.S.R.)  
S.R.J., 23(6-20) (German 2221) (1980) See C.A. 81,  
121P.

APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6"



"APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6

Achievements of wood chemistry N. I. Nikulin  
J. Applied Chem. (U. S. S. R.) 10, 1905-37 (1937). A  
review with 100 references A. A. Pudovkina

APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6"

*Car**Z 3*

RECEIVED AND FILED  
The action of chloroacetic acid on Willstätter lignin and  
on wood pulp. N. J. Nikulin and T. I. Rudneva. /  
Applied Chem. U.S.S.R. 10, 101A 20 (in French) 1950  
(1957). CICH<sub>2</sub>COOH reacts with Willstätter lignin at  
100-20° with almost complete solution of lignin, and  
the production of an ester compn. Cl 9, MeO 1.1%. The  
direct action of CICH<sub>2</sub>COOH on pine pulp under the same  
conditions results in solution of not less than 1/2 of the  
esterified lignin together with a part of the carbohydrates.  
After extg. the product with ether, removal of adsorbed  
CICH<sub>2</sub>COOH with an alcoholic NH<sub>3</sub>, and removal of the  
carbohydrate admixta. by means of acid hydrolysis (used  
5% H<sub>2</sub>SO<sub>4</sub>), the compn. of the regenerated lignin is similar  
to that of Willstätter lignin. The ppid. ester is easily  
saponified with weak alkali and with H<sub>2</sub>SO<sub>4</sub>. The treat-  
ment of ester with alc. NH<sub>3</sub> yields CICH<sub>2</sub>CONH<sub>2</sub>. The  
comparison of the elementary compn., and the Cl and  
MeO contents, with those theoretically calcd. by the  
Freudentenberg lignin formula discloses that 1/4 of the OH  
groups were esterified. Four references A A P

## APPENDIX METALLURGICAL LITERATURE CLASSIFICATION

FROM THE CLASS

Sect. No. 1

Sect. No. 2

Sect. No. 3

Sect. No. 4

Sect. No. 5

Sect. No. 6

Sect. No. 7

Sect. No. 8

Sect. No. 9

Sect. No. 10

Sect. No. 11

Sect. No. 12

Sect. No. 13

Sect. No. 14

Sect. No. 15

Sect. No. 16

Sect. No. 17

Sect. No. 18

Sect. No. 19

Sect. No. 20

Sect. No. 21

Sect. No. 22

Sect. No. 23

Sect. No. 24

Sect. No. 25

Sect. No. 26

Sect. No. 27

Sect. No. 28

Sect. No. 29

Sect. No. 30

Sect. No. 31

Sect. No. 32

Sect. No. 33

Sect. No. 34

Sect. No. 35

Sect. No. 36

Sect. No. 37

Sect. No. 38

Sect. No. 39

Sect. No. 40

Sect. No. 41

Sect. No. 42

Sect. No. 43

Sect. No. 44

Sect. No. 45

Sect. No. 46

Sect. No. 47

Sect. No. 48

Sect. No. 49

Sect. No. 50

Sect. No. 51

Sect. No. 52

Sect. No. 53

Sect. No. 54

Sect. No. 55

Sect. No. 56

Sect. No. 57

Sect. No. 58

Sect. No. 59

Sect. No. 60

Sect. No. 61

Sect. No. 62

Sect. No. 63

Sect. No. 64

Sect. No. 65

Sect. No. 66

Sect. No. 67

Sect. No. 68

Sect. No. 69

Sect. No. 70

Sect. No. 71

Sect. No. 72

Sect. No. 73

Sect. No. 74

Sect. No. 75

Sect. No. 76

Sect. No. 77

Sect. No. 78

Sect. No. 79

Sect. No. 80

Sect. No. 81

Sect. No. 82

Sect. No. 83

Sect. No. 84

Sect. No. 85

Sect. No. 86

Sect. No. 87

Sect. No. 88

Sect. No. 89

Sect. No. 90

Sect. No. 91

Sect. No. 92

Sect. No. 93

Sect. No. 94

Sect. No. 95

Sect. No. 96

Sect. No. 97

Sect. No. 98

Sect. No. 99

Sect. No. 100

Sect. No. 101

Sect. No. 102

Sect. No. 103

Sect. No. 104

Sect. No. 105

Sect. No. 106

Sect. No. 107

Sect. No. 108

Sect. No. 109

Sect. No. 110

Sect. No. 111

Sect. No. 112

Sect. No. 113

Sect. No. 114

Sect. No. 115

Sect. No. 116

Sect. No. 117

Sect. No. 118

Sect. No. 119

Sect. No. 120

Sect. No. 121

Sect. No. 122

Sect. No. 123

Sect. No. 124

Sect. No. 125

Sect. No. 126

Sect. No. 127

Sect. No. 128

Sect. No. 129

Sect. No. 130

Sect. No. 131

Sect. No. 132

Sect. No. 133

Sect. No. 134

Sect. No. 135

Sect. No. 136

Sect. No. 137

Sect. No. 138

Sect. No. 139

Sect. No. 140

Sect. No. 141

Sect. No. 142

Sect. No. 143

Sect. No. 144

Sect. No. 145

Sect. No. 146

Sect. No. 147

Sect. No. 148

Sect. No. 149

Sect. No. 150

Sect. No. 151

Sect. No. 152

Sect. No. 153

Sect. No. 154

Sect. No. 155

Sect. No. 156

Sect. No. 157

Sect. No. 158

Sect. No. 159

Sect. No. 160

Sect. No. 161

Sect. No. 162

Sect. No. 163

Sect. No. 164

Sect. No. 165

Sect. No. 166

Sect. No. 167

Sect. No. 168

Sect. No. 169

Sect. No. 170

Sect. No. 171

Sect. No. 172

Sect. No. 173

Sect. No. 174

Sect. No. 175

Sect. No. 176

Sect. No. 177

Sect. No. 178

Sect. No. 179

Sect. No. 180

Sect. No. 181

Sect. No. 182

Sect. No. 183

Sect. No. 184

Sect. No. 185

Sect. No. 186

Sect. No. 187

Sect. No. 188

Sect. No. 189

Sect. No. 190

Sect. No. 191

Sect. No. 192

Sect. No. 193

Sect. No. 194

Sect. No. 195

Sect. No. 196

Sect. No. 197

Sect. No. 198

Sect. No. 199

Sect. No. 200

Sect. No. 201

Sect. No. 202

Sect. No. 203

Sect. No. 204

Sect. No. 205

Sect. No. 206

Sect. No. 207

Sect. No. 208

Sect. No. 209

Sect. No. 210

Sect. No. 211

Sect. No. 212

Sect. No. 213

Sect. No. 214

Sect. No. 215

Sect. No. 216

Sect. No. 217

Sect. No. 218

Sect. No. 219

Sect. No. 220

Sect. No. 221

Sect. No. 222

Sect. No. 223

Sect. No. 224

Sect. No. 225

Sect. No. 226

Sect. No. 227

Sect. No. 228

Sect. No. 229

Sect. No. 230

Sect. No. 231

Sect. No. 232

Sect. No. 233

Sect. No. 234

Sect. No. 235

Sect. No. 236

Sect. No. 237

Sect. No. 238

Sect. No. 239

Sect. No. 240

Sect. No. 241

Sect. No. 242

Sect. No. 243

Sect. No. 244

Sect. No. 245

Sect. No. 246

Sect. No. 247

Sect. No. 248

Sect. No. 249

Sect. No. 250

Sect. No. 251

Sect. No. 252

Sect. No. 253

Sect. No. 254

Sect. No. 255

Sect. No. 256

Sect. No. 257

Sect. No. 258

Sect. No. 259

Sect. No. 260

Sect. No. 261

Sect. No. 262

Sect. No. 263

Sect. No. 264

Sect. No. 265

Sect. No. 266

Sect. No. 267

Sect. No. 268

Sect. No. 269

Sect. No. 270

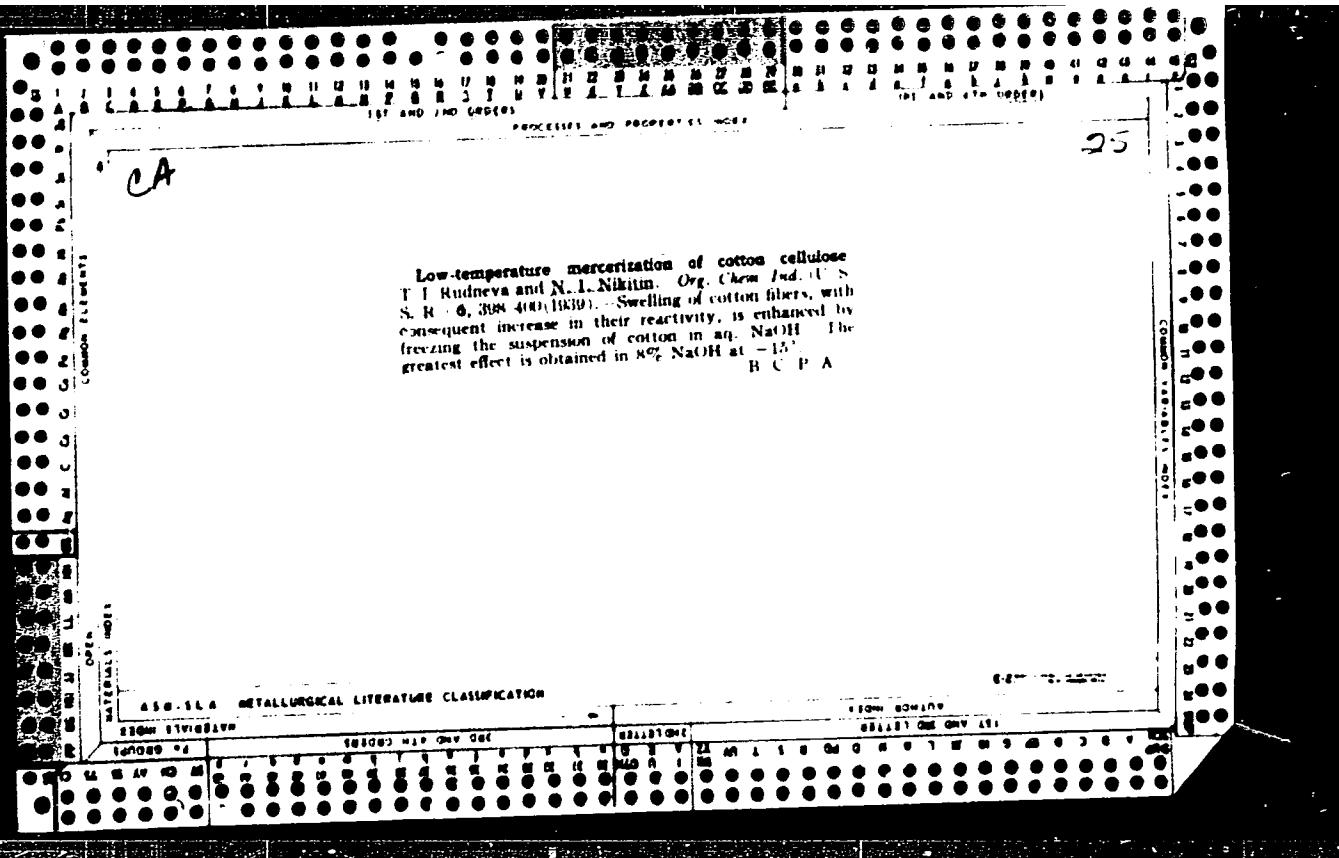
Sect. No. 271

Sect. No. 272

CA

The chemical composition of pine needles and processes  
of the production of needle fibers. I. M. Orlova and  
N. I. Nikulin. *Loskhim*. From 2, No. 9, 31 (1939).  
*Chem. Zentral.* 1940, I, 1123-4. Pine needles contain up  
to 3.5% ash, ether, alk. and H<sub>2</sub>O ext. 12.5, 28 and 20%,  
resp. The H<sub>2</sub>O-insol fraction contains 2.5-6.5% reducing  
substances and 4.5-5% tannins. For the production of  
needle fibers the needles are crushed, steam distd. to re-  
move volatile oils, treated with chl. filtered and washed  
with hot 3% Na<sub>2</sub>SO<sub>4</sub> and H<sub>2</sub>O. By treatment of the  
needles with a soln. contg. 4% SO<sub>2</sub> and 1% CaO (preheat-  
ing for 2 hrs., cooking for 4 hrs. at 140-145°) a 35% yield  
of fiber is obtained. This may be used as filling or for  
papermaking. The fibers obtained by the second process  
are of better quality than "Iglu," obtained by simple  
crushing of the needles after removal of volatile oils.  
H. R. Wirth

ASA-LSA METALLURGICAL LITERATURE CLASSIFICATION



**Investigation of lignin by alkaline fusion.** T. I. Rudneva and N. I. Nikitin. *J. Applied Chem. (U. S. S. R.)* 12, 22-5 (in French, 75) (1939). - The lignin was prepared by the Willstätter method from larch sawdust previously treated with an alk. Cells (1:1) mixt. and with hot water, yielding 2.52 and 21.07% of substances sol. in the resp. solvent. The lignin had C 61.74, H 8.27, MeO 15.20 and ash 0.79%. The fusion with KOH was carried out by the Freudenberg method (cf. *C. A.* 30, 61922), with subsequent methylation of the resulting phenol groups with  $\text{Me}_2\text{SO}_4$  at 60° and then, with  $\text{CH}_3\text{NO}_2$ , and oxidation with  $\text{KMnO}_4$ , yielding 11.3% of veratric acid (based on oxidized lignin) part of which was obtained directly after methylation. The analysis of the mother liquor after crystall. the veratric acid showed the presence of veratroyl formic acid. Conclusions. The larch lignin contained the pyrocatechol group. A. A. Podgornyy

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137010011-6"

## PROCESSES AND PROPERTIES 1001

Lignin and methylated carbohydrates extracted from lignin with dioxane (III) I. M. Orlova and N. I. Nikitin, *J. Applied Chem.* (U. S. S. R.) 12, 76-83 (in French, 84) (1939); cf. Nikitin, *et al.*, *C. A.* 31, 4051P, 4052P. The crude lignin, ppnd. with ether from the dioxane soln., consisted of water-insol. 63-83 and water-sol. substances 37-17%. The insol. substances were treated by the Freudenberg method (cf. *C. A.* 30, 61922), yielding 9.4 (12.2% by wt. of oxidized lignin) veratric acid and apparently other aromatic acids. Part of the veratric acid was decompd. during the prepns. The insol. portion of "dioxane-lignin" had ultraviolet absorption spectra similar to those of the usual preps. of lignin (cf. Herzer and Hillmer, *C. A.* 26, 3055) and also to those of isoengenol, disclosing its aromatic structure. The sol. portion consisted of substances similar to carbohydrates, having the compn. C 44.74, H 6.41, OH 22.5,  $\text{MgO}$  2.4, reducing substances (after hydrolysis) 72 and methylated carbohydrates 2.4%. The amt. of the last substances actually should be much larger. The sol. portion treated by the usual method yielded 16.5-62.0% of "tannin-like substances," disclosing that the conditions of prepns. of the crude "dioxane-lignin" affected not only the yield of the water-sol. portion but also its compn. However, the reaction for tannin substances with gelatin and for the pycrocatechol group with  $\text{HCHO}$  was neg. Therefore, the nature of the "tannin-like substances" is unknown. V. V. Dubovikov

AIA SLA METALLURGICAL LITERATURE CLASSIFICATION

ECONOMICS OF PRODUCTION

TECHNOLOGY

METHODS

TESTING

STANDARDS

INSTRUMENTS

APPARATUS

REAGENTS

SUPPLIES

LABORATORY

GENERAL

INDUSTRIAL

AGRICULTURAL

MEDICAL

PHARMACEUTICAL

CHEMICAL

PETROCHEMICAL

INDUSTRIAL

2A

**Cellulose phthalates.** N. I. Nikitin and I. A. Korolevskaya. *Bull. Acad. Sci. USSR, Chem. n.s.*, 1960, 245, 56 (in German, 25, 1, cf. C.A. 35, 3466). Since the formation of cellulose (I) phthalates from phthalic anhydride (II) and untreated I in pyridine (III) proceeds very slowly and requires prolonged heating which leads to considerable decompos. of the esters formed, various methods have been used in the pretreatment of I before esterification, to increase its activity. Most gratifying results are obtained when I is activated by swelling in water followed by removal of the solvent by means of III without intermediate drying. Esters are also easily formed without hydration I obtained by mercerization and I treated from Schweizer's reagent are used. The phthalates which are sol. in III decompose at 100-105° with the formation of II. The Cu salt of I phthalate is obtained by adding a small excess of  $CuSO_4$  soln. to the Na salt of the ester in ap. acetone. It is dried at 100-105° since it is stable at that temp. Sapon. and titration of the  $Cu(OH)_2$  group in the phthalate and determination of Cu in the salts give results which are in good agreement as regards the rate of esterification, it being about 1.2-2.0 of the HO groups based on  $Cu(OH)_2$ . The effect of the ratio II/I, temp., and duration of the reaction upon phthalization has been studied. A decrease in the temp. to 70-75° (instead of 105°), as well as a change in the above ratio from 20:1 to 5:1, causes a decrease of the reaction rate. When the duration of the reaction is increased from 1 to 8 hrs., the rate of esterification is some what increased. A 4% soln. of phthalate esterification

rate I... in ap. + acetone (2:1) or ap. and benzene (1:1) after centrifuging gives a transparent film which, however, is rather easily torn. The reasons for the solv. of the phthalates obtained by means of II in III and the insol. of esters obtained by esterifying I with phthalyl dichloride are discussed. It is assumed that the mol. structure is responsible for the different behavior. The above method used for the prep. of phthalates has been successfully employed also in the prep. of other phthalates such as those of starch.

Gertrude Berend

ASAC-SCA METALLURGICAL LITERATURE CLASSIFICATION

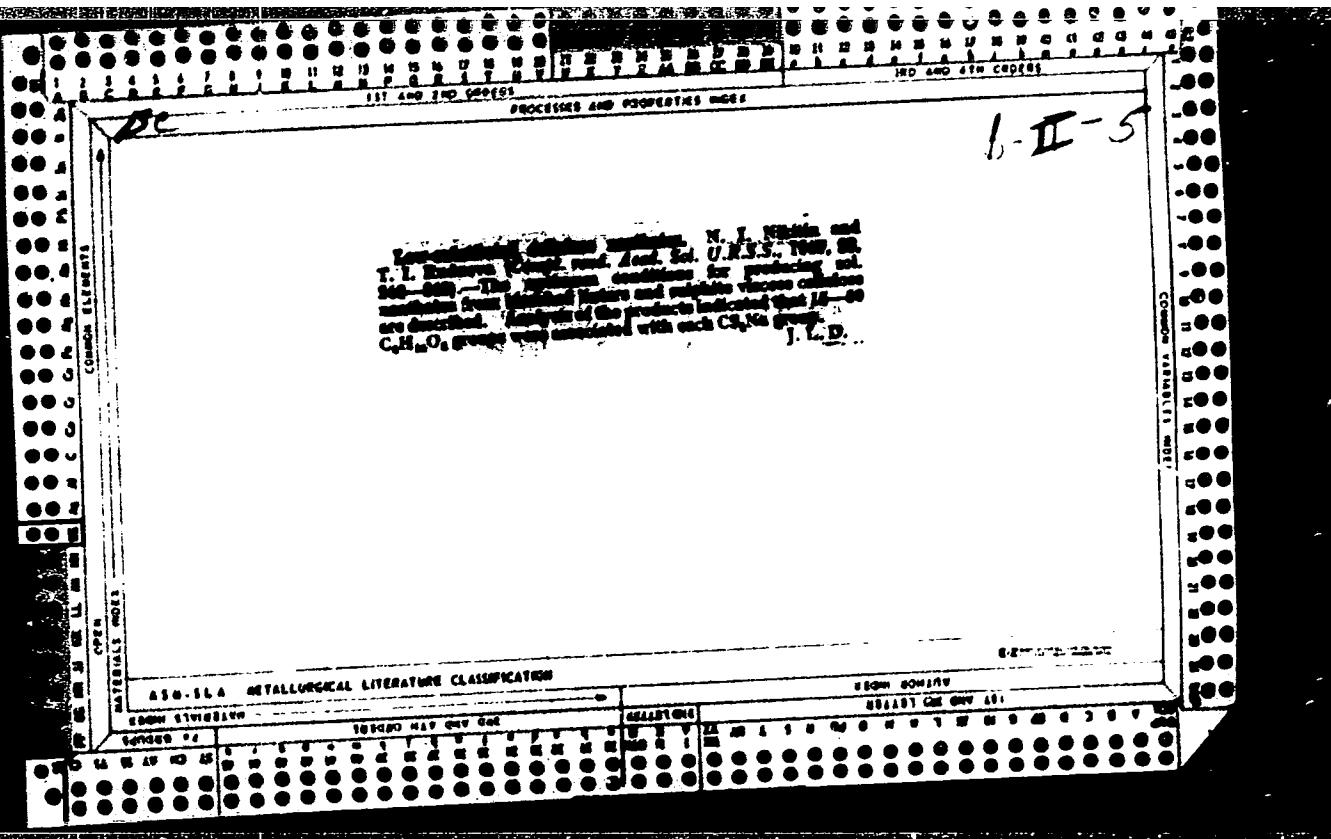
23  
ca

The role of preliminary swelling of cellulose in the preparation of its phthalic esters. N. I. Nikitin and P. I. Korchbenkin. *J. Applied Chem. (U.S.S.R.)* 13, 1120 in French, 770 (1940). A preliminary mercerization of cellulose with NaOH and consecutive washing with H<sub>2</sub>O and then with pyridine accelerated the esterification process. Thus, the esterification with phthalic anhydride (I) was complete in 4-5 hrs at 105-107° yielding a product having 1.5-2 hydroxyl groups substituted with phthalate radical (based on C<sub>10</sub>H<sub>8</sub>O<sub>4</sub>). The esterification of cellulose xanthate from Schweitzer's salt proceeded still more rapidly. The acidic cellulose phthalates were not stable at 100-105° and gradually formed I, but their Cu salts were stable at that temp. The insol. of esters obtained with phthaloyl chloride is explained by the formation of 3-dimethylamino mols.

A. A. Podgorny

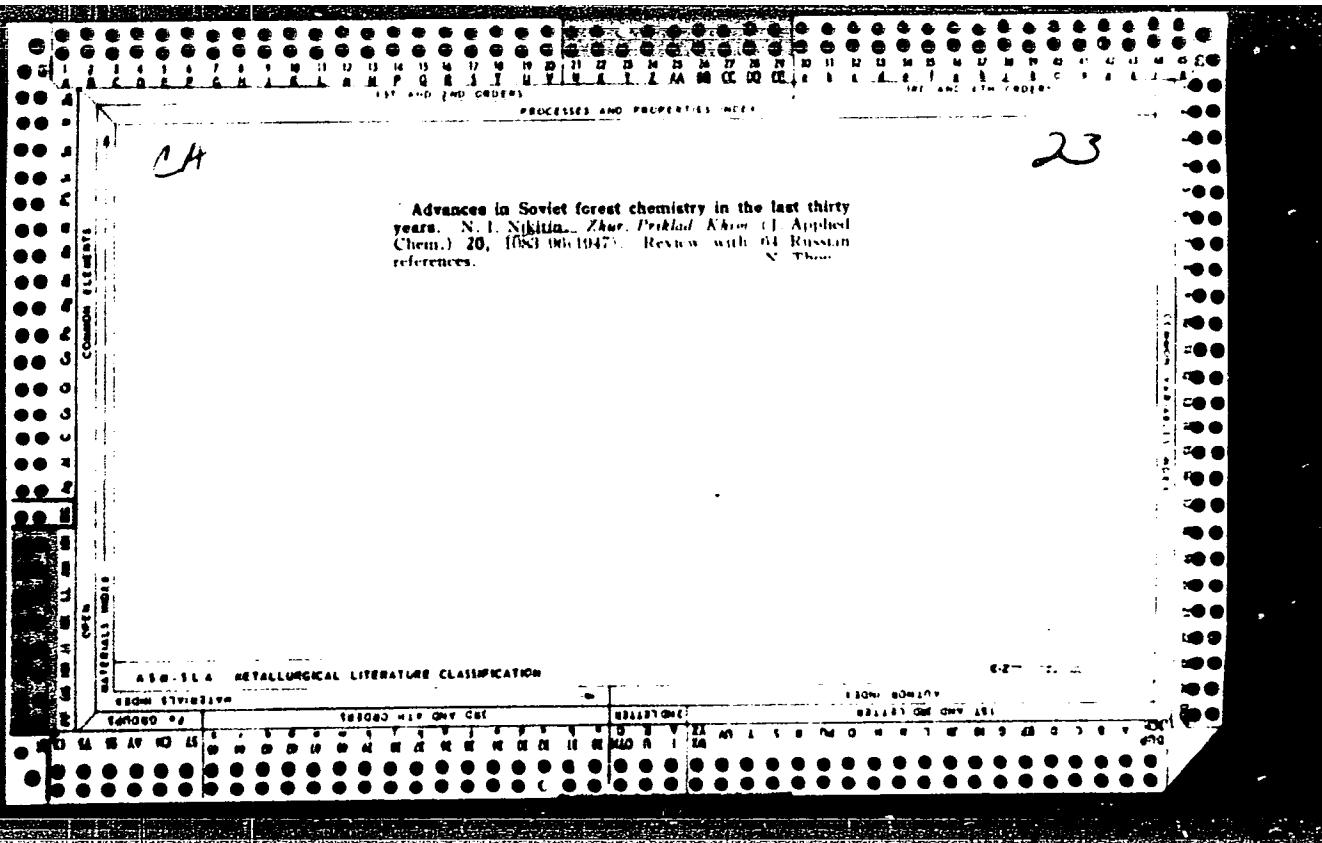
"APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6



APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6"



Low substituted glucos products of the alkylation of cellulose. N. I. NIKBILIN, A. M. Pletkanova, and I. I. Ruzovskaya. *J. Applied Chem. U.S.S.R.*, 20, 1185 (1947). Linters or bleached wood pulp were swollen with 10 times their wt. of 17% NaOH and kept in a closed vessel at 40° for 22 hrs. with MeI (D). As the percentage of I based on the wt. of cotton was varied from 11.5 to 15.5%, the MeO content increased from 1.1% to 1.45% and the solv. in 0% NaOH, both before and after freezing, increased. All the products swelled only slightly in H<sub>2</sub>O, except the most highly substituted, which swelled considerably. Similar results were obtained with bleached wood pulp. Alkylation of linters with EtBr at 50.0% was considerably less efficient than with I. In alkylating linters with PhCH<sub>2</sub>Cl (H) 25% NaOH, 22 hrs. at 50° about 1.5% H is needed for sufficient substitution to insure dispersibility in 0% NaOH. Slight pectinization of mercerized cellulose with I facilitates alkylation with H and gives more easily dispersible products. Quant. data show that the hydrolysis of cellulose (as measured by reducing-sugar values) increases in rate with increasing alkylation; at the end of 14 hrs. (10 g. I) and refluxing in 5% H<sub>2</sub>SO<sub>4</sub> the percentage of glucose is 6.2% (0.9% of I) for cotton containing 1.1% and 1.3% MeO, resp. The epoxidation rate is about 1.6 times greater for cotton containing 1.1% and 1.6% MeO than for unalkylated cotton. I. P. Dvorchik

"APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6

Recent advances in wood and cellulose chemistry. N  
I. Nikitin. *Biomass*, from 22, No. 1, 6-13(1947).  
A review with 17 references. Marshall Sutting

ALB 55-A METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6"

NIKITIN, N.I.

V. Physicochemical properties of mercerized and weakly alkylated cellulose. N.I. Nikitin and N.I. Klenkova (V. M. Makarov Technol. Inst., Leningrad). Issledovaniya v Uprali Vysokomolekul. Soedinenii, Doklady 6-oi Konf. Vysokomolekul. Soedineniyam, Akad. Nauk. S.S.R. 1949, 138-15.—In a study of the effect of alk. treatment, especially at low temp., on hygroscopicity, hydrolyzability, and av. mol. wt. of cellulose it was shown that the greatest solvent properties were possessed by 10-12% NaOH solns. at -8° to -10° (without freezing) which produced the greatest swelling

of cellulose; the yields of mercerized cellulose reached 84-90%, and the hydrolyzability and hygroscopicity of these products were the highest. As previously known, the alk. treatment reduced the av. mol. wt. Actual freezing of the mixts. led to further degradation of cellulose with increase of solv. and decrease of mol. wt.; this was particularly noticeable in 8% NaOH. The product on recovery from the alk. soln. had an av. degree of polymerization of 310. In oakwood the freezing sequence in 4% NaOH gave only a 3% increase in extractable hemicellulose, indicating a lesser effect on the wood structure than on loose cellulose matter. Repeated freezing of cellulose in H<sub>2</sub>O led to gradual drop in av. mol. wt. Light alkylation of the mercerized material with MeI (until 1.9-12.4% MeO is reached) led to a further increase in hygroscopicity owing to further opening-up of the mech. structure of cellulose. Low degree of alkylation also increased susceptibility to hydrolysis, as did a similar introduction of 2-hydroxyethyl groups by treatment of mercerized cellulose with ethylene oxide at 20°. Treatment of such products with hot 5% H<sub>2</sub>SO<sub>4</sub> resulted in the isolation of up to 70% reducing sugars.

G. M. Kosolapoff

Chemical composition of wood pulp of oak according to types. N. I. Nikulin, T. I. Rudneva, A. P. Zaitseva, and M. M. Chichikova. *Zhur. Priklad. Khim.* (J. Applied Chem.) 22, 67-78 (1949).—Samples of various oak trees from different locations in the U.S.S.R. did not show large differences in compo.; variations of 1-2% within a species and of 5-6% within the type of component sought were found. The largest variation (2-6%) was found in the tannins taken either from the center (high level) or periphery of the tree.

G. M. KOMLADOO

**APPROVED FOR RELEASE: 07/19/2001**

CIA-RDP86-00513R001137010011-6"

NIKITIN, N.I.

PHASE I

TREASURE ISLAND BIBLIOGRAPHIC REPORT

AID 166 - I

BOOK

Call No.: TA419.N55

Author: NIKITIN, N. I.

Full Title: WOOD CHEMISTRY

Transliterated Title: Khimiya drevesiny

Publishing Data

Originating Agency: Academy of Sciences of the USSR. Forestry Institute

Publishing House: Academy of Sciences of the U.S.S.R.

Date: 1951 No. pp.: 578 No. of copies: 4,000

Editorial Staff

Editor: Golovnin, M. I.

Tech. Ed.: None

Editor-in-Chief: Danilov, S. N., Corresponding

Appraiser: None

Member, Academy of Sciences, U.S.S.R.

and Sukachev, V. N., Academician.

Others: Several Soviet scientists are named as contributors.

Text Data

Coverage: The book represents a compilation of Russian and non-Russian scientific materials on the chemistry of wood, published up to 1950. A description is given of cellulose derivatives, lignin, hemicelluloses, and polyuronides. The manufacture of sulfite and sulfate celluloses, destructive distillation and hydrolysis of wood are also covered.

1/2

Khimiya drevesiny

AID 166 - I

The book is well written, contains many Soviet references and might be of interest to those specializing in the chemistry of wood.

Purpose: The purpose of this edition was to assemble recent significant scientific data published on the chemistry of wood.

Facilities: Names of many Soviet scientists are mentioned.

No. of Russian and Slavic References: Many references are cited in the footnotes (1920-1950).

Available: Library of Congress.

2/2

28

*ca*

Effect of low degree of alkylation on the properties of cellulose fiber. N. I. Nikulin and N. I. Klekova (V. M. Molotov Technol. Inst., Leningrad). *Zhur. Tekhn. Khim.* Akad. Nauk. (J. Applied Chem.) 24, 206-207 (1951). Introduction of up to 11-12% of alkyl groups (Me, Et, HOCH<sub>2</sub>CH<sub>3</sub>) into cellulose causes rupture of H bonds in the cross links and increases hygroscopicity and hydrolyzability of the end groups and opens up the internal structure of the fiber. The effect increases up to a certain degree of alkylation; 7.8% alkyl groups cause an 800% increase in hydrolyzability (5% H<sub>2</sub>SO<sub>4</sub>). Hydroxyethylcellulose shows max. hydrolyzability at 10-11% alkylation. The degree of hygroscopicity increase depends on the nature of the alkyl groups and their hydrophilic properties. The degree of polymerization of the cellulose proper does not appear to affect the hygroscopicity or hydrolyzability.

G. M. Kosolapoff

23

CA

The aqueous hydrolysis of oakwood. A. F. Zaitseva and N. I. Nikitin. *J. Applied Chem. U.S.S.R.* 24, 427-38 (1951) (Engl. translation) (Russian Ed. 24 392-403).—Upon prolonged pretreatment of oakwood (*Quercus fonscolombe*) sawdust with boiling water at 100°, the amts. of water-sol. substances obtained were: 32.0% after 500 hrs. and 65.6% after 1000 hrs.; heartwood chips gave 49.4%, and sapwood chips 53.1% after 500 hrs. It was found that the various substances in wood dissolved at different rates during mild aq. hydrolysis. Thus pentosans and uronic acids dissolved fastest, lignin somewhat slower, and cellulose much slower. The data indicated that lignin exists in wood as a substance possessing its own properties and contg. a much higher percentage of C (64-67%) than the carbohydrates. The wood carbohydrates largely enter the aq. soln. in polymer form. Xylose was found to be the predominating sugar in the hydrolysates. Anatomical investigation and microchem. reactions of cross sections have shown that the prolonged extn with water involves intensive leaching of the wood constituents, not only in the surface layers of the cells but also in their internal portions. Measurements of the libriform cells have shown that its walls were 72% thinner after 1000 hrs. of aq. extn. than the walls of the libriform cells that had not been extn with water.  
T. R. Zegree

NIKITIN, N. I.

Vinylation of cellulose. V. V. Shtitevskii, N. A. Obolonskaya, and N. I. Nikitin. Zhur. Friklad. Khim. (J. Applied Chem.) 24, 1045-51 (1951). -Vinylation of purified sulfite cellulose (1% lignin and 5.1% H<sub>2</sub>O) with C<sub>2</sub>H<sub>2</sub> with 20-40% KOH at 130-75° gave predominantly a fibrous product as well as a resinous alkali-sol. material. The latter after purification through Et<sub>2</sub>C extn. failed to show any loss of AcH upon acid hydrolysis, whereas the fibrous products gave less than the expected amts. The fibrous product corresponds by analysis to 0.15-substitution, i. e., addn. of 1 mol. C<sub>2</sub>H<sub>2</sub> per 2 glucose units, and was obtained under the milder conditions (above) as well as under the more drastic ones. The most drastic conditions (40% KOH, 33 Hrs.' reaction) gave a product which, on treatment with H<sub>2</sub>O sepd. into floating and sinking fractions. The former corresponds to the above formula; the latter was a product of addn. of 3 mols. C<sub>2</sub>H<sub>2</sub> per 2 glucose units. Apparently the products are not vinyl ethers but further reaction products of them, such as acetals of ethyldene derivs. of cross-chain type.

G.M.F.

TOVSTAYEV I. P., ISKRAVENKO M. K., NIKITIN V. I.

Larch

On the chemical composition of the wood of the Daurian larch. Zbir. prikl. znan. Akad. Nauk SSSR. 1954.

9. Monthly List of Russian Accessions, Library of Congress, August 2, 1958. Unclassified.

Nikitin, V.I.

Academy of Sciences

Academy of Sciences of the USSR  
Institute of Forensic Research  
of the USSR Academy of Sciences

Nikitin, V.I.

Ministry of Internal Affairs

Institute of Forensic Research  
of Sciences of the USSR

NIKITIN, N.I.

ARBUZOV, A.Ye., akademik; KAZANSKIY, B.A., akademik; PETROV, A.D., chlen-korrespon-  
dent AN SSSR; MIKITIN, N.I., chlen-korrespondent AN SSSR; FIGUROVSKIY, N.A.,  
professor, otvetstvennyy redaktor; POGODIN, S.A., professor; ZVIAGINTSEV,  
O.Ye., professor; YEVSTIEVA, P.M., uchenyy sekretar'.

[Materials on the history of Soviet chemistry; reports given at the 2nd  
All-Union Conference on the History of Soviet Chemistry, 21-26 April 1951]  
Materialy po istorii otechestvennoi khimii; sbornik dokladov na vtorom  
Vsesoiuznom soveshchanii po istorii otechestvennoi khimii, 21-26 aprelia  
1951 g. Moskva, Izd-vo Akademii nauk SSSR, 1953. 318 p. (MLRA 7:4)  
(Chemistry--History)

NIKITIN, N.I., chlen-korrespondent.

Wood chemistry. Nauka i zhizn' 20 no.5:22-24 My '53.

(MLRA 6:6)

1. Akademiya nauk SSSR.

(Wood-using industries)

NIKITIN, N.I., otvetstvennyy redaktor; FIGUROVSKIY, N.A., doktor  
khimicheskikh nauk, redaktor; BARZAKOVSKIY, V.P., doktor khimicheskikh nauk, redaktor.

[Materials on the history of Russian chemistry; reports made at meetings of the Leningrad branch of the Commission on the History of Chemistry] Materialy po istorii otechestvennoi khimii, doklady zaslushannye na zasedaniakh leningradskogo filiala Komissii istorii khimii. Moskva, Izd-vo Akad. nauk SSSR, 1954. 122 p. (MLRA 8:1)

1. Chlen-korrespondent Akademii nauk SSSR. 2. Akademiya nauk SSSR.  
Otdeleniye khimicheskikh nauk.  
(Chemistry--History)

NIKITIN, N. I.

The amount of unfreezing water in cellulose fibers after swelling. N. I. Klenkova and N. I. Nikitin, *Zhur. Priklad. Khim.*, 27, 171-81 (1954) — The detn. of unfreezing H<sub>2</sub>O in cellulose fibers was made by the calorimetric method (cf. Weissberger, *Physical Methods of Org. Chem.*, 1945 (C.A. 39, 25137)). Fibers that had been swelled by immersion in H<sub>2</sub>O retain larger amts. of unfreezing H<sub>2</sub>O (at -5°) than do the fibers that had been swelled by exposure to H<sub>2</sub>O vapor at 100% relative humidity. Both natural and regenerated fibers display this behavior. Thus swelling in the liquid H<sub>2</sub>O leads to greater disorientation of the internal coating of the fiber. While fibers that had not been dried after various chem. treatments (with Cl or with NaOH) retain large amts. of unfreezing H<sub>2</sub>O, considerably smaller amts. are held by the same fibers that had been dried after the chem. treatment. Drying appears to draw together the cellulose chains with closures by intermol. bonds, and the subsequent swelling cannot immediately return the fiber to the earlier state. The results indicate that the cellulose structure should be regarded as quite mobile and plastic.

Generally the hydrolyzability (by hot 5% H<sub>2</sub>SO<sub>4</sub>) of the fiber rises with increase of the retained H<sub>2</sub>O content.  
G. M. Kosolapoff

3

MF  
11-10-54

NIKITIN, N.I.

Chemical composition of holocellulose and hemicelluloses of oak wood and of some Far-Eastern coniferous species. A. P. Zaitseva and N. I. Nikitin, *Zhur. Priklad. Khim.* 27, 665-74 (1954). — Results of the methods of prepn. of holocellulose by means of Cl and  $H_2NCH_2CH_2OH$  and  $NaClO_4$  show that the most convenient procedure is the latter, but both methods give comparably reproducible results (cl. Wise, et al., *C.A.* 40, 1312<sup>a</sup>). Oak, spruce, and fir give 60-71% holocellulose contg. under 0.1% lignin. Alk. extn. of holocellulose gives 28%  $\alpha$ -cellulose from angiosperms and 51% from conifers. Most hemicellulose is contained in the 1st fractions from treatment of homocellulose with 4, 11, 17, and 24% NaOH under N. Oak hydrolyzates contain no mannose but yield glucuronic acid. Oak yields about 18% hemicelluloses, conifers some 18%, as a result of such an alk. extn. G. M. Kosolapoff

NIKITIN, N.I.

NIKITIN, N.I.; CHOCHIYEVA, M.M.

Effect of diluted alkali on lignin. Bum.prom.29 no.5:6-8 My '54.  
(MIRA 7:7)

1. Chlen-korrespondent Akademii nauk SSSR (for Nikitin) 2. Insti-  
tut lesa Akademii nauk SSSR.  
(Wood--Chemistry)

NIKITIN, N.I.; POGODIN, S.A., professor, redaktor; GOLOVCHIK, M.I., redaktor;  
SMIRNOVA, A.V., tekhnicheskij redaktor

[Career of a chemist; sketches of the past] Na puti nauchnogo  
rabotnika-khimika; ocherki iz proshlogo. Moskva, Izd-vo Akademii  
nauk SSSR, 1955. 106 p. (MLRA 9:2)

1. Chlen-korrespondent AN SSSR (for Nikitin)  
(Chemists)

1/1

URSR/Chemical Technology. Cellulose products  
and Their Derivatives and their  
Cellulose and its Derivatives. Prep.

Author: Kef Zhar-Khant', No. , 2001

Author : Nititin, N. I.

Inst : Institute for Problems of the Academy  
of Sciences of the U.S.S.R.

Title : Methods for the Study of the Chemical Properties  
of Cellulose.

Orig Pub: Tr. Inst. Biolog., Acad. Sci. UkrSSR, 1962,  
Vol 5, p.

Abstract: No abstracts.

Card 1/1

AID P - 2779

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 7/19

Authors : Lyubimova, Ye. N. and N. I. Nikitin

Title : Use of activated cellulose in the synthesis of methyl  
and ethyl ethers of low degree of substitution

Periodical : Zhur. prikl. khim. 28, 4, 402-406, 1955

Abstract : Methylation and ethylation of pretreated cellulose is  
described. Methyl and ethyl iodides, ethyl chloride  
and dimethyl sulfate were used in the etherification.  
The solubility of ethyl cellulose containing 2%  
 $OC_2H_5$  (in 6% NaOH at 20°C) was 94%. Five tables, 9  
references (2 Russian: 1941-1951).

Institution : Laboratory of Chemistry of Wood and Cellulose of the  
Wood Technical Academy im. S. M. Kirov.

Submitted : My 3, 1954

NIKITIN, N.I.

U.S.S.R.

Kraft pulp from Daursk larch. A. P. Zaitseva, I. P. Fedorkincheva, S. D. Antonovskii, and N. T. Nikitin. *Bumash. Prom.* 30, No. 2, p. 12 (1965). - *Akad. Nauk SSSR, Vsesoyuz. Nauchno-Issled. Inst. Lesovedeniya i Lesopriborostroyeniya, Tr. 1965, No. 10, p. 10.* Kraft cooks were made on Daursk larch from Sakhalin and kraft cooks were made on Daursk larch from Sakhalin and the Yakutsk region. At 20.5% active alkali, 26.5% sulfidity, a wood to liquor ratio of 1:6, 3 hrs. and 1 hr. at 173°, the percentage yields (total ?) were 43.1, 43.2, 39.7, and 34.0; percentage screenings 2.7, 2.8, 2.8, and 2.0; Björkman no. 146, 152, 154, and 156; percentage pentosans in pulp 6.1, 6.5, 3.5, and 7.0; and percentage lignin in pulp 7.5, 8.1, 8.2, and 9.2 for wood congs. 13.2, 15.6, 16.2, and 22.0% H<sub>2</sub>O exts., resp. At 20% active alkali, 26% sulfidity, 3 hrs. to, and 1-2 hrs. at 173°, the av. yield was 44%, Björkman no. 140; breaking length 10,700, double folds 4800, and stretch 4%. A bleachable kraft (36-9% yield, 84-105 Björkman no., 3-5% pentosans, 3-4% lignin, 10,000 m. breaking length, and up to 9300 double folds) could be obtained by extending the cooking time 1 hr. and increasing the active alkali to 26-9%. Preliminary extn. of the wood with H<sub>2</sub>O gave a pulp with lower Björkman no. and decreased pentosan and lignin content. John Lake Keays

NK/TIN NI  
Properties of solutions of low-substituted xanthates  
I. N. Kulin and E. A. Abramova, Zhur. Priklad. Khim., No.  
22(1950); cf. C.A. 43, 2220g. Continuous stirring  
must be used in order to prep. uniform solns. of low-sub-  
stituted xanthates at freezing temps. (cf. C.A. 35, 2341);  
uniformity is estd. by the rate of filtration through a sieve.  
Filterable solns. were obtained with 15% CS<sub>n</sub> at temps.  
slightly above freezing. With 5-6% CS<sub>n</sub> (based on  $\alpha$ -cellu-  
lose) filterable solns. were obtained. These were more readily  
hydrolyzed and reduced than those obtained with 12-13.5%  
CS<sub>n</sub>. The viscosity at 20° of 7 and 7.5% solns. plotted vs.  
aging time (stored at 17-18°) passed through a min. Solns.  
of high stability were obtained even after short periods of  
aging. The degree of polymerization of xanthate solns. be-  
fore and after freezing did not change; apparently the celu-  
lose bonds did not rupture during freezing. I. B.

MIKITIN, N. I.

*3*  
Preparation and characteristics of low-substituted methyl- and carboxymethyl-cellulose. N. I. Nikitin and G. A. Petropavlovskii (Zh. prikl. Khim., 1986, 29, 1540-1549).—Low-substituted simple and complex esters give increased reactivity and show high hydrophilic characteristics when small quantities of substituted radicals are introduced into the celluloses. The prep. and characteristics are described of low-substituted methyl- and carboxymethyl-cellulose isolated from Uinters by a freezing technique. The cellulose dissolves in 4-6% aq NaOH with low degree of substitution (9-10 for methyl- and 2 for carboxymethyl-cellulose). For satisfactory dissolution in alkali, prolonged swelling at low temp. before freezing is suggested. Fractionation in water of the differently-substituted methylated fibre products showed that in all cases they contained 29-31% OMe. Freezing led to an increase in water-sol. particles but not to any variation in the OMe content. A lower polymerisation value increases the amount of sol. fractions but the latter also contain 29-31% of OMe groups. A. L. B.

*4E4*  
*4E2 (f)*  
*3 May*

✓ Characteristics of solutions of low-substituted methylcellulose.

1707-17.1. Weak 1 mol.-% NaOH

Institute for Macromolecular Chemistry, New stability with very little reduction of viscosity over a period of time; the mol. wt. of 1 (degree of polymerization 1200-1400) tended to be lowered by dissolving in 6.3 mol.-% caustic alkali during the freezing process, but with polymers of lower mol. wt. this does not occur, there being a higher degree of elasticity but low polymerizability. Examination of 1-2% alkaline solutions of I indicates instability in the latter; the viscosity can vary with time and gradually decreases even when isolated from the effect of CO<sub>2</sub>; the structure is also degraded. All alkaline solutions of methylcellulose increase their viscosity and quickly coagulate at 50°C. In 1 mol.-% NaOH at 50°C. the coagulation temperature is 50°C. In 4.5 mol.-% NaOH, coagulation begins at 35°C., the decrease of viscosity begins at 30°C. The properties of films formed from 1 mol.-% NaOH solution of I are briefly discussed; the films have a satisfactory mechanical strength (8-11 kg./sq.cm.); the water-absorbing quality of the film

NIKITYCH, V. Y., AND PAVLOVSKY, V. A.

"Properties of cellulose ether solutions," paper presented at the 1st Congress on the Chemistry and Physics of Macromolecules, Moscow, Russia, Moscow, Forest Research Inst<sup>1</sup>.

B-3,084,395

SUKACHEV, V.N., akademik; NIKITIN, N.I.; VASIL'YEV, P.V., prof., doktor ekon.  
nauk; YURKEVICH, N.A., red.; KFUSH, L.A., red. izd-va; SOKOL'SKAYA, Zh.M.,  
BRATISHKO, L.V., tekhn. red.

[Progress of science in Soviet forestry during the past 40 years]  
Dostizheniya nauki v lesnom khoziaistve SSSR za 40 let. Moskva,  
(MIRA 11:7)  
Goslesbumizdat, 1957. 352 p.

1. Akademiya nauk SSSR. Institut lesa. 2. Chlen-korrespondent  
Akademii nauk SSSR (for Nikitin).  
(Forests and forestry)

CHUDAKOV, M.I., kand.khim.nauk; NIKITIN, N.I.; SUKHANOVSKIY, S.I.,kand.tekhn.nauk

Modern ideas on the chemistry and structure of lignin. Khim.nauka  
i prom. 2 no.4:408-415 '57.  
(MIRA 10:11)

1. Chlen-korrespondent AN SSSR (for Nikitin).  
(Lignin)

ZAYTSEVA, A. F.; FEDORISHCHEVA, I. P.; NIKITIN, N. I.

Extraction and utilization of water-soluble substances of  
Dahurian larch by the hydrolysis method. Gidroliz. i lesokhim.  
prom. 10 no. 2:3-6 '57. (MLRA 10:5)

1. Institut lesa AN SSSR i Leningradskaya lesotekhn.cheskaya  
akademiya.  
(Larch) (Hydrolysis)

NIKITIN, N.I.

Automatic weft straightening on tenter frames. Tekst.prom. 17  
no. 6:57-58 Je '57. (MLRA 10 7)  
(Textile finishing) (Automatic control)

M.I.; SIMONOVA, L.K.

Nikolai Pavlovich Fedot'ev; on his 60th birthday. Zhur.prikl.khim.  
30 no.3:337-338 Mr '57. (MLB 10:5)  
(Fedot'ev, Nikolai Pavlovich, 1897--)

*Pregnadiene-3,6-dione from Lignin and Preparation  
of M-Aminobutyric Acid*

(1357) - Lignin (I) was first heated under  $\text{CO}_2$  at  $200^\circ\text{C}$  and dry lignin (II) obtained. NaOH (23%) and dissolved in 5% NaOH were treated with  $\text{CaH}_2$  (III) in a revolving autoclave at an initial pressure of 13-14 atm. With I at  $170^\circ\text{C}$  the reaction was

done, based on the original lignin, and the conversion of III was 9.4 times greater.

This reaction was carried out at  $170^\circ\text{C}$  for 1 hr.

NIKITIM, N.I.; IVANOV, V.A.; MONINA, K.Z.

Determining the evaporative capacity of cylinders for liquefied  
gas. Gaz. prom. 7 no.3:23-26 '62.  
(MLA 1 :16)

~~SECRET~~ ~~REF ID: A6511~~  
CHOCHIYEVA, M.M.; NIKITIN, N.I.

Chemical properties of dioxane lignin from oak and some conifers.  
Zhur.prikl.khim. 30 no.12:1820-1827 D '57. (MIRA 11:1)  
(Lignin) (Dioxane)

PETROPAVLOVSKIY, G.A.; NIKITIN, N.I.

Properties of nitric acid esters of cellulose of low substitution.  
Zhur.prikl.khim. 31 no.12:1862-1869 D '58. (MIRA 12:2)  
(Nitrocellulose)

TSVETAYEVA, I.P.; YUR'YEVA, M.K.; NIKITIN, N.I.

Characteristics of the chemical composition of the Dahurian larch  
wood. Trudy Inst. lesa 45:22-30 '58. (MIRA 11:11)  
(Larch) (Wood--Chemistry)

CHOCHIYEVA, M.M.; TSVETAYEVA, I.P.; YUR'YEVA, M.K.; ZAYTSEVA, A.F.;  
PETROPAVLOVSKIY, G.A.; NIKITIN, N.I.

Distribution of arabogalactan in the Dahurian larch wood. Trudy Inst.  
lesa 45:31-49 '58. (MIRA 11:11)  
(Larch) (Galactan)

ZAYTSEVA, A.F.; NIKITIN, N.I.

Using microsections for investigating the distribution of arahogalactan  
in cell walls of the Dahurian larch wood. Trudy Inst. lesa 45:50-60 '58.  
(MIRA 11:11)

(Larch)

(Galactan)

ZAYTSEVA, A.F.; FEDORISHCHEVA, I.P.; ANTONOVSKIY, S.D.; NIKITIN, N.I.  
Sulfate cellulose from the Dahurian larch wood. Trudy Inst. lesa  
45:70-78 '58. (MIRA 11:11)  
(Larch) (Cellulose)

ZAYTSEVA, A.F.; FEDORISHCHEVA, L.P.; NIKITIN, N.I.

Various uses of the Dahurian larch wood. Trudy Inst. less 45:85-92  
(MIRA 11:11)

'58.

(Larch)

(Wood)

PETROPAVLOVSKIY, G.A.; NIKITIN, N.I.

Properties of low-substituent carboxymethylcellulose from the  
Dahurian larch wood. Trudy Inst. lesa 45:93-102 '58.  
(MIRA 11:11)

(Cellulose) (Larch)

YUR'YEVA, M.E.; NIKITIN, N.I.

Sulfite pulping of the Dahurian larch wood. Trudy Inst. leza 45:103-135  
'58. (MIRA 11:11)  
(Cellulose) (Larch)

A. I. N. K. T. T.

Sov/R2-59-1-16/77

(O) AUTHOR: None Given  
 TITLE: General Meeting of the Department of Chemical Sciences of the Academy of Sciences, USSR on October 23 and November 27-28, 1958 (Obshchaya seshchiya Otdeleniya khimicheskikh nauk Akademii Nauk SSSR 27 oktyabrya i 27-28 noyabrya 1958 g.)

PARTICIPANTS: Laretsky, Arsen'ev, Ivanov, SSSR, Otdeleniye khimicheskikh nauk, 1958, No. 3, pp. 555B, Otdeleniye khimicheskikh nauk, 1958, No. 3, pp. 564-566 (SSSR).

ABSTRACT:

This is a report on the General Meeting of the Department of Chemical Sciences, Akademiya Nauk SSSR. On October 23, 1958, the General Meeting of the Department of Chemical Sciences of the Akademiya Nauk SSSR took place under the chairmanship of Academician N. S. Isaev. A. I. Dergacheva delivered a lecture on the investigation of the Field of Tellurium Chemistry. She emphasized the fact that the interest in tellurium has considerably increased in the course of the last years because of the valuable semiconductor properties of tellurium and numerous tellurides. In her lecture, Dergacheva reported on the production of pure tellurium, on the investigations of the behavior of admixtures and on the investigation of numerous tellurides. The lecturer was asked numerous questions. N. A. Poroy-Kobitsa, Candidate of Physical and Mathematical Sciences spoke on the "Stereoelectronicity of Complex Compounds of Tellurium". On the basis of direct-ray structures, analyses carried out at the Institute branch of neorganicheskaya khimiya, L. S. SKR (Institute of General and Inorganic Chemistry, Akademiya Nauk SSSR), and the M. V. Lomonosov Moscow State University, it was found that all tellurium thioacarate compounds of acids, which are separated from the solution at different concentrations represent, according to their structural character, typical air-coordination compounds. The analysis of the crystalline structures makes it possible to set up common crystallochemical rules in the series of amonic thioacarate compounds. G. B. Molny and S. Z. Bogolyubova, Corresponding Member, Akademiya Nauk SSSR, took part in the discussion. M. I. Gonik, Doctor of Chemical Sciences spoke on the application of X-ray methods in the investigation of the formation of large fractions in the synthesis of organic substances and the techniques of detection. By means of experiments on the kinetics of the synthesis of the application of high-pressure opens up prospects in this field. S. V. Boroditsky and B. V. Kitygorodskiy, Corresponding Members, Akademiya Nauk SSSR, took part in the discussion. On the occasion of the general meeting held under the chairmanship of Academician L. P. Vinogradov from November 27 to 28, 1958, N. I. Matlin, Corresponding Member, Akademiya Nauk SSSR and G. A. Farkas, Corresponding Member spoke on the "Properties of Low-substituted Cellulose Esters and Their Solutions". The following scientists took part in the discussion: S. M. Danilov, Corresponding Member, O. P. Golova, Doctor of Chemical Sciences, et al.

S. M. Samsonov, Doctor of Chemical Sciences spoke on the "Specific Sorption of Ions of Organic Substances". The system of weakly swelling ion-exchange resins, which cannot absorb organic ions, ergodic substances and organic systems of non-affective bases of producing chemically pure streptomyces and penicillium. The lecturer was asked many questions. E. I. Vol'shennikov, Doctor of Statistical and Mathematical Sciences spoke on the "Intermolecular Interaction and the Form of Macromolecules in Solutions". The lecturer demonstrated that the molecular weight of the polymer determined by a joint determination of the characteristic viscosity and diffusion, B. V. Tolkenskiy, Corresponding Member, Akademiya Nauk SSSR, Doctor of Physical and Mathematical Sciences and A. I. Kitygorodskiy, Doctor of Chemical Sciences took part in the discussion.

Card 1/4

2

P

Card 2/4

Card 2/4

A II

"APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6

1. Q: What is the relationship between the U.S. and the Soviet Union? (Soviet Union) P: The U.S. and the Soviet Union have been engaged in a long-standing conflict over various issues, including the Cold War, the Space Race, and the Arms Race. They have also had political differences, such as the Cuban Missile Crisis and the Vietnam War. (Soviet Union)

2. Q: Who is the leader of the Soviet Union? (Soviet Union) P: The leader of the Soviet Union was Leonid Brezhnev, who served as General Secretary of the Central Committee of the Communist Party of the Soviet Union from 1964 until his death in 1982. (Soviet Union)

3. Q: What is the history of the Soviet Union? (Soviet Union) P: The Soviet Union was formed in 1922 after the Russian Revolution, which overthrew the Tsarist government. It became a major power during World War II and played a key role in defeating Nazi Germany. After the war, it expanded its influence through its satellite states in Eastern Europe and through its global military and political alliances. (Soviet Union)

4. Q: What is the current status of the Soviet Union? (Soviet Union) P: The Soviet Union collapsed in 1991, marking the end of the Cold War. Its successor state, Russia, continues to play a significant role in world politics and economy. (Soviet Union)

APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6"

W. L. G. (W. L. G. )

Non-Substituted Cervical Estrogen and  
Properties of Their Application

172  
SC 1001137010011-6

Recently, attention has been given to the use of non-substituted cervical estrogens in the treatment of menopausal symptoms. These substances have been found to be effective in the relief of symptoms associated with menopause and have also demonstrated value in the treatment of Kuru-Kulu and Vaginitis (Z-PK, 1966, No. 1, p. 10). It is believed that weak estrogenic action may contribute to the effectiveness of non-substituted cervical estrogens in the treatment of the above-mentioned conditions. The properties of non-substituted cervical estrogens are discussed below.

Conclusions:

2. S. M. T. & J. C. L. - 1988. E. 100000  
3. G. R. & J. T. - 1988. E. 100000

## SCOTT, JAMES

On September 20, 1955, the  
Properties of Their Application

SCV 13-44-4-3

SOLVENTS OF THIS COMPOUND WHICH WERE INVESTIGATED  
WITH 10% AMMONIUM BISULFATE, AND GAVE THE FOLLOWING  
BREAKING LOAD (kg/cm<sup>2</sup>) OF THE PAPER AND PLY:  
AND WITH CONCENTRATION OF 10% ON THE PAPER. THE TESTS  
ESTABLISHED THAT CARBOXYBUTYLIC ACID HAS A  
DEGREE OF SOLUBILIZATION (STARTING WITH  $\gamma = 1.0$ ,  
AND UP) WAS ALSO DETERMINED. 4-1% NaOH solution  
ALTERS COLOR AND TASTE (Trubetskoi, 1955,  
AN SSSR, 1955, Vol. 6, p. 94; ZPKH, 1955, No. 30,  
p. 183). FILTS MADE FROM THIS MATERIAL BY PRE-  
SIPPLER WITH 10% AMMONIUM BISULFATE SOLUTION  
SHOWED A BROMO-LUGO'S STAIN TEST (TRUBETSKOI,  
1955, p. 101, and 102). ADDITION OF 10% NaOH  
BREAKS DOWN THE PAPER FIBERS IN THE PAPER PLY  
CONSIDERABLY. IT IS NOTED THAT PAPER'S MECHANICAL  
CHARACTERISTICS, LOAD-BREAK AND SOLUBLE IN  
WATER  $\gamma = 1.0$  WERE SIMILARLY SOLVED IN 4-1%  
NaOH solution (ZPKH, 1955, No. 30, p. 94);  
THE SOLUBLE IN WATER (THE PAPER PLY)

USA-Soviet Civilian Exchange  
Protocol Project Activities

SCY-C-11-1-1-1

Established, and maintained, by the USSR at 27 -  
Rings road from Moscow, the following organizations  
and institutions: The USSR Ministry of Foreign  
Affairs, USSR, U.S.S.R., U.S.A., U.S.S.R., U.S.  
and U.K. Institutes: Belor. Publ. Comittee,  
A.C.E., J. C. B. Publishing, M.I.T. Eng. Comm., etc.  
etc. (...); R. C. Martin, H. J. Perkins, H. Warner,  
J. A. Clark, Sc. ... (etc.), etc. (...).

Scy-C-11-1-1-1

SMIRNOV, V.A.; NIKITIN, N.I.

Calculation of dead-end gas pipes. Gaz. prom. 4 no.11:31-34  
'59. (MIRA 13:2)  
(Gas distribution)

NIKITIN, N.I.

Freezing and dissolving of cellulose and its esters in  
alkalies and the prospects for the application of this method.  
[Trudy] NT0 bum.i der.prom. no.8:27-39 '59. (MIRA 16:2)

1. Chlen-korrespondent AN SSSR.  
(Cellulose)

5(1)

UV-C-1-1

NAME: John C. Dill, Jr.

TITLE: Researcher in the preparation of  
the cellulose derivatives of fluorine-alkyl  
carboxylic acids, especially from plant  
tissues.

ORG. NAME: Department of Chemistry, Florida Institute of Technology

ABSTRACT: Cellulose has been isolated from the wood of the tree  
Liquin (Dill et al., 1961) in the quantity of 40.0%.  
It is round rotted wood by dioxane without acid catalyst. The  
Liquin is soluble in water to an extent of 45.0%. The  
percentage of lignin has no effect on the yield of dioxane-liquin  
and extract a by dioxane in the presence of 1.1% HCl. If an  
acid catalyst the yield increases with the decrease of  
lignin to 1.0%. If lignin-alkyl in the presence of

Subject of trial in Leningrad of four members of KGB and  
members of Dzerzhinsk.

TC-76, etc. - see also in several other cases  
including documents.  
The case of the four Soviet agents.

S. 1982: 1983, 1984, 1985

Case 1984

CHOCHIYEVA, M.M.; NIKITIN, N.I.

Low molecular weight dioxane lignin. Zhur. prikl. khim. 34 no.12:2733-  
2737 D '61. (MIRA 15:1)  
(Lignin) (Dioxane)

NIKITIN, Nikolay Ignat'yevich. Prinimali uchastiye: ABRAMOV A. Ye.A., starshiy nauchnyy sotr., kand. khim. nauk; AKIM, E.L., inzh.-tekhnolog; ANTONOVSKIY, S.D., dots., kand. tekhn. nauk; VASIL'YEVA, G.G., inzh.-tekhnolog; ZAYTSEVA, A.F., starshiy nauchnyy sotr., kand. tekhn. nauk; KLENKOVA, N.I., kand. tekhn. nauk; MALEVSKAYA, S.S., kand. khim. nauk; NIKITIN, V.N. starshiy nauchnyy sotr., kand. fiz.-mat. nauk; OBOLENSKAYA, A.V., kand. tekhn. nauk, dotsent; PETROPAVLOVSKIY, G.A., starshiy nauchnyy sotr., kand. tekhn. nauk; PONOMAREV, A.N., kand. tekhn. nauk, dots.; SOLECHNIK, N.Ya., prof., doktor tekhn. nauk; TOKAREV, B.I., inzh.; TSVETAYEVA, I.P., kand. tekhn. nauk; CHOCHIYEVA, M.M., kand. tekhn. nauk; ELLASHBERG, M.G., doktor tekhn. nauk; YUR'YEV, V.I.; KARAPETYAN, G.O., red.izd-va; ZAMARAYEVA, R.A., tekhn. red.

[Wood chemistry and cellulose] Khimiia drevesiny i tselliulozy. Moskva, Izd-vo Akad.nauk SSSR, 1962. 711 p. (MIRA 15:2)

1. Chlen-korrespondent Akademii nauk SSSR (for Nikitin). 2. Zaveduyushchiy kafedroy fizicheskoy i kolleidnoy khimii Lesotekhnicheskoy akademii (for Yur'yev).

(Cellulose)

NIKITIN, N.I.

Some design features worked out by the State Scientific Research and Design Institute on the Utilization of Gas in National Economy. Ispol'. gaza v nar. khoz. no.2: 163-166 '63. (MIRA 18:9)

1. Glavnnyy inzh. Saratovskogo gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta po ispol'zovaniyu gaza v narodnom khozyaystve.

PETROPAVLOVSKIY, G.A.; VASIL'YEVA, G.G.; KRUNCHAK, M.M.; NIKITIN, N.I.

Properties of films of low-substituted nitrates of wood  
cellulose. Zhur. prikl. khim. 36 no.8:1816-1821 Ag '63.  
(MIRA 16:11)

CHOCHIYEVA, M.M.; BRESTKIN, Yu.V.; NIKITIN, N.I.

Fractional composition of sulfite pulps from broadleaf  
wood. Zhur. prikl. khim. 36 no.9:2055-2060 D '63.  
(MIRA 17:1)

CHOCHIYEVA, M.M.; VISHNEVSKAYA, N.S.; NIKITIN, N.I.

Fractional composition of bleached broadleaf cellulose.

Zhur. prikl. khim. 36 no.10:2276-2281 O '63.

(MIRA 17:1)

"APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6

MILITIA, N.Y.

Grinding attachment. Mashinostroitel' no. 43-4 Ap'64  
(MIRA 1737)

APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6"

"APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6

MILITARY, M.L.; 1947-1951.

RECORDED IN THE CIVILIAN DEFENSE INFORMATION CENTER  
BY THE NATIONAL ARCHIVES

APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001137010011-6"

CHOCHIYEVA, M.M.; VISHNEVSKAYA, N.V.; N.KL.N., N.I.

Fractional composition of aspen cellulose in a state nearest to  
the natural, and its change in the process of delignification.  
Zhur. prikl. khim. 37 no.6:1340-1344 Je '64.

(MIA 18:)

AKIM, E.L.; MIKITIN, N.I.

Production and study of low-substituted oxyethylcellulose.  
Trudy LTITSBP no.1:193-198 '74.

Acetylation of low-substituted oxyethylcellulose. Ibid.:199-205  
(MIRA 18:8)

MATVEYeva, L.A.; NIKITIN, N.M.

Trip of a Soviet trade-union delegation to the Korean People's  
Democratic Republic. Razved.i okh.nedr 28 no.1:50-51 Ja '62.  
(MIRA 15:3)

1. Moskovskiy territorial'nyy komitet profsoyuza rabochikh  
geologorazvedochnykh rabot (for Matveyeva). 2. Tul'skaya  
kompleksnaya geologorazvedochnaya ekspeditsiya (for Nikitin).  
(Korea, North--Mineral industries)  
(Korea, North--Visitors, Russian)

A 17/11

AUTHOR: Nikitin, N.M., Engineer

118-58-3-10/21

TITLE:The Mechanization of Installation Assembling in Shaft Work  
While Drilling (Mekhanizatsiya montazhnykh rabot pri burenii  
skvazhin)PERIODICAL:Mekhanizatsiya Trudoyemkikh i Tyazhelykh Rabot, 1958, # 3,  
pp 29-30 (USSR)ABSTRACT:

The article deals with the mechanization of labor consuming assembling and dismantling work while drilling test wells up to 300 m. The Mosbassuglegeologiya Trest (Trust) uses movable drilling devices of the "UKB-2-100", "SBU-150-ZIV" and "URB-Zam" types drawn by tractors. These drilling sets are used only in summer. In 1951, the trust constructed an fixed drilling set for use in winter only.

In 1954, trust innovators designed a movable drilling mechanism to be used the whole year round, in winter on sledges, in summer on wheels. The wooden body contains the drilling equipment: a drilling machine of the "ZIF-300", "KA-2M-300" or "ZIV-150" type; for hydrogeological drilling the KAM-500 type, a pump of the ZIF-200/400 type; appropriate electric motors and a bench for fitters. The weight of the drilling machine when on wheels is 8.9 tons, without wheels

Card 1/2

118-58-3-10/21

The Mechanization of Installation Assembling in Shaft Work While Drilling

8.2 tons. At present, the Mosbassuglegeologiya Trust uses  
50 movable drilling machines of this type.

There is 1 graph.

AVAILABLE: Library of Congress

Card 2/2

AUTHOR:

Nikitin, N.E.

132-58-7-11/13

TITLE:

Experience in the Use of Mobile Drilling Aggregates in the  
Mosbassuglegeologiya Trust (Opyt ispol'zovaniya peredvizh-  
nykh burevykh agregatov v treste Mosbassuglegeologiya)

PERIODICAL:

Razvedka i okhrana nedor, 1958, Nr 7, pp 56-58 (USSR)

ABSTRACT:

This article describes a mobile drilling aggregate devised in 1954 by the author and workers of the Mosbassuglegeologiya Trust, B.A. Ryb'yev, V.P. Konevalov, V.V. Fedoseyev, which is being used for year-round drilling in the Moscow region. Drilling benches KA-2M-300, ZIF-300 and ZIV-150, were placed on a specially constructed platform on 4 sets of wheels combined with sledges, which allowed the transportation of the bench over all types of ground in winter and summer. Bore holes of 300 m can be drilled by these aggregates. Much time and money was saved by the general utilization of these aggregates. There are 2 diagrams

ASSOCIATION:

Trest Mosbassuglegeologiya (The Mosbassuglegeologiya Trust)

1. Drilling machines--Design

Card 1/1

NIKITIN, N.M.

Occurrences of gypsum deposits in Tula Province. Sov.geol. 2  
no.11:138-141 N '59. (MIRA 13:5)

1. Mosbassuglegeologiya.  
(Tula Province--Gypsum)

NIKITIN, N.M.

Rock salt deposits in the Moscow Basin and prospects for their utilization. Sov.geol. 4 no.11:153-158 N '61. (MIRA 14:11)

1. Tul'skaya kompleksnaya geologorazvedochnaya ekspeditsiya.  
(Moscow Basin--Salt deposits)

NIKITIN, N.M.; YASYREV, A.P.

Conditions governing the formation of gypsum in the southern  
wing of the Moscow Basin. Izv. AN SSSR. Ser.geol. 27 no.7:59-69  
Jl '62. (MIRA 15:6)

1. Tul'skaya kompleksnaya geologorazvedochnaya ekspeditsiya.  
(Moscow Basin--Gypsum)

NIKITIN, NIKOLAY NIKOLAYEVICH

NIKITIN, Nikolay Nikolayevich, 1897- ; FEDOROV, I.; KUMKES, S.N., redaktor;  
YUSHKEVICH, M.L., redaktor.

[Tientsin] Tian'tesin'. Moskva, Gos. izd-vo geogr.lit-ry, 1953.  
43 p.  
(MLRA 7:3)  
(Tientsin)

"... , Nikolay Nikitovich.

Science

Collection of arithmetical problems and exercises for third grades of primary school.  
Moskva, Gos. Uchebno-Pedagogicheskoe Izd-vye, 1942. Izd 4-e.

Monthly List of Russian Accessions, Library of Congress, June, 1942. 1 clippings.

ЧИКЕТЯВЫЙ, Н.Н.

Reshenie arifmeticheskikh zadach v nachall'noi skoile [Solving arithmetic problems in elementary school]. Izd. 5-e. Moscow, Naukpolisiz, 1952. 161 p.

SO: Monthly List of Russian Acquisitions, Vol. 6, No. 2, May 1953

NIKITY, N. V.

SPS NIKITY, N.V.: POLYAK, G.I. AV. GLAZOV, L.N. Semina s'khoz'istva,  
i chisl'nykh rukovodstv. Dlya tret'uego klassa nach. Shkoly. per. I.  
Amotin, K. lenin. 2-Ye Isi. Sverdli, Abra, 1951. 12 s. s ill. 2 str.  
2,000 RUB. 95% -Na Akadem. Yez.- (55-600) 11(76)

SO: Knizhnyaya Letopis', vol. 1, 1955

NIKITIN, N. N.

NIKITIN, N.N. (Moscow)

Training of teachers in methods of teaching mathematics at the Methodological Institute of the Academy of Pedagogical Sciences. Mat. v shkole no.4:82-84 Jl-Ag '54. (MLRA 7:7)  
(Teachers, Training of) (Mathematics--Study and teaching)

NIKITIN, N. N.

4900. NIKITIN, N. N., POLYAK, G. B. i VOLODINA, L. N. Sbornik arifmeticheskikh zadach i uprazhneniy. Dlya pervogo klassa nach. Shkoly. Izd. 3-ye, s 10-go (RUS.) makhachkala, dagchpedgiz, 1955. 148s. s Ill. 21sm. 10.000 EKZ. lr. 20k. V per.-- na avar. yaz.--(54-56030) 511(076)

SO: Knizhnaya Letopis', Vol. 1, 1955

NIKITIN, N. N.

4903. NIKITIN, N. N., POLYAK, G. B. i VOLODINA, L. N. Sbornik arifmeticheskikh zadach i uprazhneniy. Dlya 4-go klassea nach. Shkoly. 4-ye IZD., s 10-go Rus. Nukus-Samarkand, Karakalpakgiz, 1955. 155 s. s Ill. 21sm. 3.000 EKZ. lr. 55k. V per.--Na karakalpak. yaz.-- (54-57829) 511(076)

SO: Knizhnaya Letopis', Vol. 1, 1955